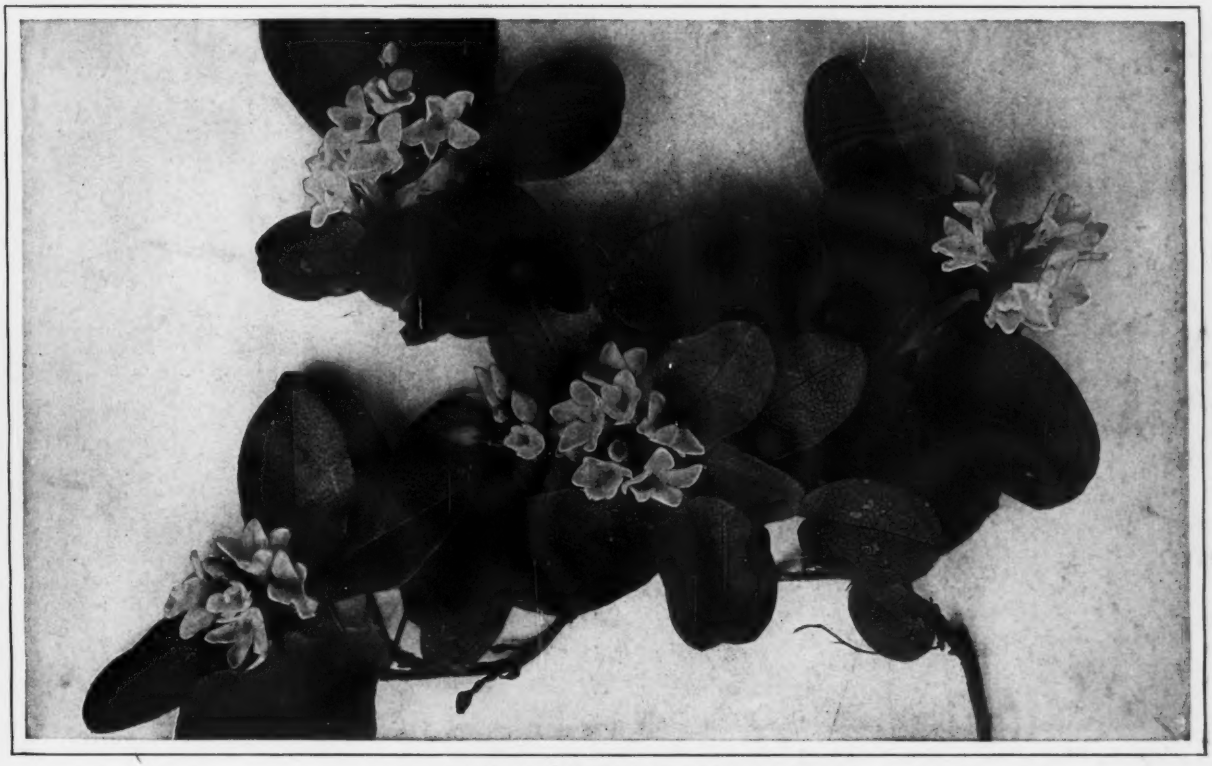
New York State Conservationist



TRAILING ARBUTUS; MAYFLOWER
Epigaea repens

State of New York Conservation Department

April-May, 1948

At Last, Spring Comes to the North Country

(See editorial, and also page 6)

THE BEAR PICTURES

As everybody knows, March 20 was the first official day of Spring, and a fine day too. It was warm out, and sunny; after a really tough winter, it was Spring indeed; it was Saturday; it was no day to work on this sheet.

But on the previous afternoon Bill Petty, our District Forester in Saranac Lake, had called us up with the kind of news that will activate this staff any day—Saturday, Sunday, or even Monday. He said a Mr. George Duprey had just dropped in to report a number of bears asleep in a pine stump not far from his house, and was the Conservation Department interested? It was, very. A few minutes later both our cameramen were on their way to the Town of Swastika, in Essex County, where the bears were in residence.

First thing Saturday morning an expedition started out. Mr. Duprey scouted in advance, and came back to report that sure enough the bears were still in the stump but awake and beginning to move around, whereas they'd been asleep when a Mr. Lawrence Avery's hound (who gets credit for the discovery) had investigated them a couple of days before. Now, the first day of Spring was obviously getting to them.

The stump, which was in a swamp rapidly filling up with melting snow, was enormous—five feet across—but even so it had its full complement of bears. Mother bear was in there with three cubs. The photography proceeded without incident, Doug Finch took the picture on the opposite page and those on page 6, and when our party left the bears were still in winter quarters.

But to finish the story, they pulled out on March 23. Mr. Duprey found their apartment vacant that morning and only one track, a big one, leading away from it. He guessed that mother bear must be carrying all her young.

So we never know how or where we're going to get material for this magazine. But if anybody ever took any better pictures of black bears in the wild, we wouldn't mind seeing them.—Editor

TO SUBSCRIBE

Print clearly your name, street and number, city and state, and send this address with $1.00 (check, money order, or cash at sender's risk) to the *Conservationist*, N. Y. S. Conservation Dept., Albany 7, N. Y.

No stamps, please.

VOL. 2, NO. 5 APRIL-MAY 1948

STATE OF NEW YORK
THOMAS E. DEWEY, GOVERNOR
Published Bi-Monthly By the
CONSERVATION DEPARTMENT

PERRY B. DURYEA, *Commissioner*
J. VICTOR SKIFF, *Deputy Comm'r.* ROBERT A. WELLS, *Sec'y.*

DIVISION OF CONSERVATION EDUCATION
CLAYT SEAGEARS, *Director*

FRED EVERETT
ROLAND B. MILLER
Editorial

P. W. FOSBURGH, *Editor*
EARL McGUIRK, DOUG FINCH
Photography

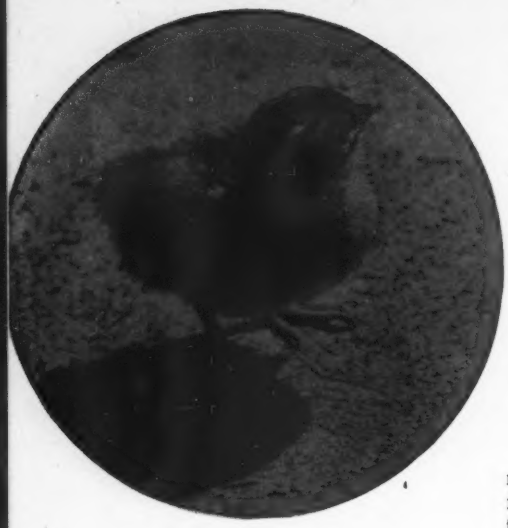
The Conservationist is an official publication of the N. Y. S. Conservation Dep't., published every two months at the Department's offices, Arcade Bldg., Albany, N. Y. No advertising accepted. Subscription rates $1.00 per year. Entered as Second Class matter July 24, 1946 at the Post Office at Albany, N. Y., under Act of March 3, 1879.

CONTENTS

POOR JOHN PHEASANT....Earl R. Holm 2
DEER SEASON A FLOP....P. W. Fosburgh 5
THE BEAR PICTURES....Doug Finch 6
STRIPERS....Whiting Evans, Ted Townsend 7
BLACKFLY....Dr. R. D. Glasgow 8
1948 LEGISLATIVE HOPPER....J. Victor Skiff 10
THE RAINBOW....John R. Greeley 12
SEED TO TREE....Arthur Amadon 14
SPRING FLOWERS....Dr. Homer D. House 16
INDIAN LAKE....Mrs. Harlan Fish 18
1/6th OF THE STATE, Conclusion....P. W. Fosburgh 21
FLORA, FAUNA....Ralph Smith, Robert W. Darrow 24
WILDLIFE LANDLORD....Clayt Seagears 32

SCATTER SHOTS 26, DEPARTMENT ACTIVITIES 28
LETTERS TO THE EDITOR 30

Permission is granted to reprint any text from this magazine provided proper credit is given to the New York State Conservation Department and to this magazine.



Poor JOHN PHEASANT!

THE WHISTLE toots and the carrousel starts. It gains momentum. The calliope cuts in and soon the strident boops can be heard clear across the countryside. Round and round goes the merry-go-round. Again the whistle toots. The calliope loses its breath and the contraption stops, only to start up again with a fresh load of passengers a few minutes later.

But there's one passenger who holds a season ticket on the merry-go-round, and he's been riding it for years. John Pheasant, naturalized citizen, has been listening to the boop and toot of the calliope for a long, long time.

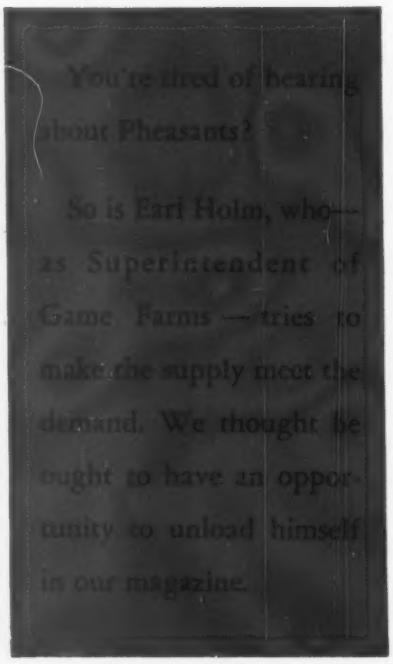
The rise, decline and fall of the pheasant in America has been the subject for millions of words at sportsmen's meetings alone. There is no closed season on the discussion, but through all the years very little conclusive material has gone into the record on how to provide good pheasant hunting at reasonable cost to the hunters. Thousands and thousands of sportsmen have aired their pet theories so that posterity never will be left in doubt. But we'll all have to admit that, like the merry-go-round, the controversy for the most part is still moving in circles.

It is not to be suggested that this piece will do much to ease the situation. But it may help somebody to grab a brass ring and get a longer lift. Furthermore, we didn't ask for it. The Editor wanted our opinion, as Superintendent of the Department's Bureau of Game Farms, on what part stocking plays in maintaining pheasant populations. Everyone has his opinion. Our own may or may not coincide with those of others who have had a greater or lesser degree of experience than we've had, so we'll simply base our observations on what we've seen on the game farms and in the field.

These are some of the main merry-go-round questions: Does pheasant stocking pay? Do pen-reared birds survive from year to year and in good quality and number? Are birds reared with hens better than so-called brooder birds? Is one strain of pheasant better than another? If so, what characteristics make it better? What is the proper age of a pheasant for release? Do birds over-wintered and released contribute more than summer and fall released birds? Why not hold pheasants until they are full grown before releasing?

Before getting down to brass tacks on that challenging group of questions, there's one common fallacy that should be corrected and laid to rest forever. In the minds of most persons, a pheasant is a pheasant if it has its full complement of feathers, a tail and practical use of its wings and legs. When making nuts and bolts or tin cans, the first ones off the assembly line are just as nearly like the last as modern machines can make them. But appearances are deceiving. There may be considerable difference in the quality of the nuts and bolts made by one manufacturer and those produced by another.

The same thing applies to pheasants; some birds may be perfect in health, conformation and vigor. They may be ideal for stocking and, in fact, entirely comparable to their wild brethren. But others, produced under different methods, may be more closely akin in actions and stamina to a milkfed broiler.


You're tired of hearing
about Pheasants?
So is Earl Holm, who—
as Superintendent of
Game Farms — tries to
make the supply meet the
demand. We thought he
ought to have an oppor-
tunity to unload himself
in our magazine.

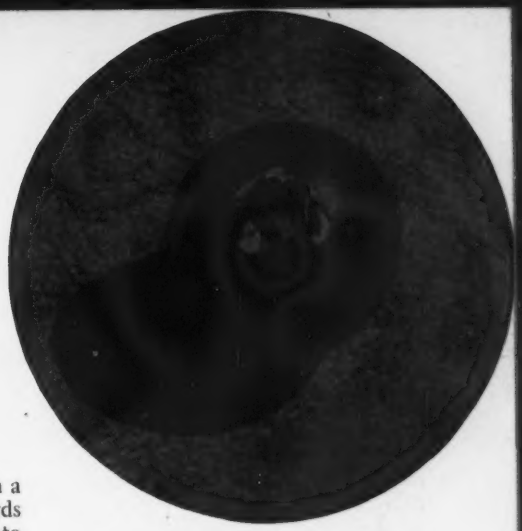
WHEN speaking of pheasants for restocking, then, I feel that there are far too many times when a pheasant is *not* a pheasant. *But*, if sportsmen are to have birds only of the very highest quality—and that's the only kind that will do the job for them—they must be prepared to pay a premium. Such a price is entirely justifiable and, so far as we're concerned, old John Pheasant can get off the merry-go-round on that one. We must stock pheasants that are pheasants, or not stock at all.

Do game farm-pheasants survive?

For one reason or another (and human nature being what it is), there's no question but that many thousands of pheasants have been liberated by well-meaning sportsmen in areas where the birds couldn't possibly live. For reasons best known to pheasants, there are many places where these birds existed 20 years ago but where a *wild* ringneck won't live now for love or money. How could a *pen-reared* bird be expected to make its home and raise a family in such a place? If it isn't good enough for a wild bird to live in, should we assume that a game-farm product will survive or stay there?

Many folks just can't reconcile themselves to the fact that the living quarters must be right or a species cannot survive. This applies just as much to pheasants as to any other of the animal species, including *homo sapiens*. The pheasant is a hardy, adaptable, tenacious,

The Merry-go-round goes round and round and Poor John Pheasant is still on it



sporting game bird. If he didn't have these qualities, he never would have occupied the important niche that he has taken over in America. When we analyze the situation honestly, doesn't it seem that we are expecting a little too much of him with some of our haphazard liberations?

BANDING studies in some states show a comparatively small return. It might be expected of me to say that I don't believe that the results of a lot of the studies prove anything about survival of the birds. Based on a voluntary return by hunters, regardless of publicity, prizes and ballyhoo, it is conceded by many that banding studies are of little value except, possibly, as an index to trends. On the other hand, it has been proven on controlled hunting areas in New York that a much higher return of bands can be expected if each hunter is checked as he leaves the area. It also has been found that pheasants, somehow, are able to lose their bands so that there is an appreciable loss of the type most commonly used. This factor gums up the records.

Banding studies in New York have usually disclosed a higher return of banded birds than those of most of the other states. The running story of "Operation—Seneca County" is familiar to current subscribers of the *Conservationist*. With hunting pressure not at its peak on the area and a hunting season of only one and a half days, it seemed to me that the return of pen-reared birds was rather favorable. Our banded birds made up 58 per cent of the total bag.

In any event, sufficient conclusive work has been done in this State to indicate that birds produced on its game farms do have a satisfactory rate of survival. In fact, it's reasonably obvious that they *must* have. After all, our pheasant populations were established by game-farm birds.

Are pheasants reared by hen foster-mothers better than those reared by incubators and brooders? Who knows the answer to this one? Certainly not I. For a private game farm operating on a small scale, it's my feeling that birds reared with hens would develop into better sporting stock than those reared by brooders. But, I don't believe that a better bird would be developed because of the association with the hen foster-mother. I feel it would be a matter of more adequate range. Most game farms operating under the incubator-brooder system are inclined to crowd their birds in closer confinement.

On the farms operated by the Conservation Department, the brooder-started birds are turned out on good range as soon as they are weaned from the heat of the brooder. Thus, actual differences in rearing by the two methods should be rather slight, especially since the brooder birds learn to forage for themselves, face varied weather conditions and are given every opportunity to exercise their protective instincts against their enemies during an interval of several weeks on the big game farm open ranges before they are trapped up and shipped out for release.

While studies to date have indicated there is a slightly higher recovery return from birds reared with hen foster-mothers, there is still a question of whether the costs over a period will justify the continuance of the system.

In any case, it seems to me to be a waste of time and an undue strain on the blood vessels to get all wrapped up over hens and brooders when there's a subject much closer to home and of far greater importance. It is a subject, though, which probably will be ignored generally. I'm referring here to my former question: When is a pheasant not a pheasant? We come now to the practical aspects of this question as they affect a game farm program.

There are two general types of pheasants being produced in this country. One type is a meat bird and the other is a bird for restocking. Some game farms cater exclusively to the hotel and restaurant trade, and naturally they raise meat birds. Other farms produce strong-flying birds for restocking purposes only. Still others produce birds for both markets. The meat bird frequently is raised in close confinement through the use of battery brooders and wire-floored sun porches, and by one means or another the vices of feather-picking and cannibalism are eliminated or at least controlled. The birds generally are fed a ration which will produce maximum growth and weight in minimum time. The close confinement saves fat and increases profits. Unfortunately, and we hate to admit this, some of our sportsmen-co-operators still rear birds in this manner from chicks provided by the Department for restocking their areas. It's not hard to guess what happens to these birds when liberated.

In contrast to the meat bird, a pheasant produced for restocking should be given adequate range and should be reared under conditions as nearly as possible to those utilized by wild birds. We've said this before. Very often the response is that "our club doesn't have much money and we can't rear birds the same way the State can."

WE can report, however, that an increasing number of co-operators are providing more adequate range so that the waste is not nearly so great as formerly. When we consider all the cash invested annually by New York sportsmen for feed, labor and equipment to raise the 100,000 day-old pheasant chicks furnished them by the State, it certainly would seem that the job should be done right or not at all. Otherwise, the time and money could be more wisely spent.

Is one strain of pheasant better than another? A subject which gives John Pheasant another merry-go-round ride is the relative merit of big, slow-flying pheasants that will fill the pot for the meat hunter or small, sporty birds that give a good dog a workout and test the hunter's skill. This is my pet lament.

Not too many years ago wild birds were reasonably abundant and satisfied the desires of a smaller number of pheas-

ant hunters than there are today. At that time far fewer pheasants were stocked by the Department than today in order to satisfy the needs. However, it wasn't long before the Department was buffeted by pressure for big, fat birds for the pot and tried to meet that demand. Fortunately, the present administration got us to change back to the old practices of Harry Rogers. The reaction was about what we expected. Some of the finest Chinese stock in the country was secured. These were small, wiry birds, thrifty and alert. They were bred into our established line of breeders and their numbers built up. Last year, finally, approximately half the pheasants distributed from New York's game farms were of this smaller type—even though the shipping age was increased over previous years by from two to four weeks.

IMMEDIATELY we began to receive letters complaining about "small birds no larger than pigeons." Other complaints were received from sportsmen who said they used to feed several people on a three-pound cock pheasant but that today's birds hardly provided meat enough for one. The boys complained that the pheasants were stunted, runted, immature and generally inferior to any they had ever gotten before. Of course, there were a lot of gunners who expressed open admiration for the "new strain" but the plaudits were outnumbered by the complaints. We recently discussed this with a game breeder who had his early training in Europe, and he summed up the situation this way: "What the sportsmen want," he said, "is a one-pound pheasant when it flushes that weighs four pounds when dropped in the bag." Well, we can't have our cake and eat it, too, pheasants being what they are.

What is the proper age at which to release a pheasant?

The majority of the birds stocked in New York are released between the ages of eight and twelve weeks. In order to appraise the situation fairly and honestly, it doesn't seem to me that game-farm birds should be expected to have a *higher* rate of survival between their eighth week and maturity (or the opening of the hunting season) than that of wild birds. So isn't it a fair question to ask what proportion of wild birds that reach eight weeks of age actually mature and are available during the hunting season? And who can answer that one? But anyway, if we are able to get a reported take of 20 per cent of the birds released during a hunting season of only 15 hours with most of the birds released at ten weeks of age, I don't think we are too far off. And remember that take applied to both areas and one was plastered with foxes.

We know that during certain poor seasons there is an appreciable loss of young wild birds during the period between the summer surveys to the opening of the hunting season. The factors responsible for the principal loss are still anybody's guess. It is my strong belief, however, that a good pheasant reared on range where it is exposed to wild or semi-wild conditions might well be released at an age somewhere between eight and ten weeks. Incidentally, the State game farms are trying their level best to rear every single bird under exactly such conditions. This eight-ten weeks' schedule is based on the premise that the earlier the bird is released, the more rapidly it will become adjusted to its wild environment.

There's no research thus far that shows conclusively that mature pheasants released in the spring prior to the nesting season give better results than birds released in the fall, nor is there any research to support the opposite view. Most will concede, though, that there is a greater recovery by sportsmen if mature birds are released just prior to or during the hunting season. That, of course, might well be expected. This is direct stocking for the gun, as practiced on many private and commercial game preserves.

Stocking for the gun seems feasible now only under extraordinary conditions, simply because of the cost. If the habitat is so poor that it is necessary to stock birds solely for the gun, doesn't it seem that under present conditions it would be better not to stock at all? On the other hand, if sportsmen enjoy their pheasant gunning to the extent that they are willing to pay the shot, that's something else again. We can raise the pheasants and release them right under the gun—if the people who do the shooting are willing to pay.

THERE is one more thing I'd like to point out about pheasant liberations. As I said, every single bird reared on New York State's game farms has at least one month's experience on big open-range fields before being trapped up for shipping and subsequent liberation. The only confining device is an 8-foot fence. When the pheasants reach ten weeks of age they begin to feel the full power of their wings. Under certain conditions thousands might leave the fields. Obviously that's fine for the surrounding region but definitely not good for other areas to which the birds normally would have to be shipped. Thus it seems obvious that the holding of pheasants beyond ten weeks becomes increasingly difficult if we are to retain our system—and without that system the quality of the birds necessarily must suffer to a high degree.

Finally, I believe that the degree of survival of pheasants stocked in New York is substantially higher than most people seem to suspect. It is my belief, also, that the program of stocking pheasants of the quality now being produced is sound. Let me add, however, that our goal is a game-farm pheasant with attributes approaching as nearly as possible those found in the sportiest and hardiest of wild birds.

BUT no matter what is said or done, there's no doubt but that—until the day comes when every pheasant hunter can be satisfied—our long-tailed friend will still be riding on the merry-go-round. I'm afraid he's in for quite a ride.

—EARL R. HOLM

How *not* to handle pheasants in releasing

MR. William Blast, editor of *The Broken Pole and Rusty Musket*, the periodical devoted exclusively to the cause of conservation, sat happily at his desk. He had just returned from a deer hunting trip which had been, thank goodness, completely unsuccessful, and he was now prepared to let his readers know about it. His banner headline, already written, was clear evidence of his editorial and reporting genius: DEER SEASON A FLOP.

But Mr. Blast, a conscientious editor, decided that in all fairness his story should have a little more documentation, so he put in a call to the Conservation Department.

"Blast speaking," he said. "What's the dope on deer?"

"You mean you'd like to have the figures on this season's deer kill," said a voice in Albany.

"Did somebody kill one?" asked Mr. Blast, slapping his thigh at this clever jibe and imagining the confusion it would cause at the other end.

"The total kill," came the answer, "was ten per cent above that of last year, and an all-time record for the State. Would you like the figures on regional take, and take by county?"

There was no answer. Muttering something about whippersnappers and bureaucrats, Mr. Blast had hung up. If no reliable figures could be obtained from the Conservation Department, he would get his own, and he knew where to get them. He called up Si Sideburns.

"Hello Si. This is your old friend Blast from the *Pole and Musket*. Remember? Well, forget it then. Listen Si, you're 103 years old and you know a lot about deer hunting. What do you think about the lousy season we had this year? Might call it a stinkeroo, eh old timer?"

"I got one," piped Mr. Sideburns.

"You what?" This was a stunning reverse. "Now listen Si, you've never let me down before. Why, you haven't been out of the house for 15 years. You know every fall we publish a story about how you've failed to get your buck for the tenth consecutive year or something. Now listen, old timer," and Mr. Blast took a more conciliatory tone, "You're 103 and you oughta stay home. You need a lot of rest. Now what did you want to go out deer hunting for?"

"I didn't," croaked Mr. Sideburns. "I shot him out of the attic window."

Making a mental note that he would have to develop some new contacts, Mr. Blast put down the phone and faced his typewriter. DEER SEASON A FLOP. "Hunters beware," he wrote. "Misleading statistics are now being circulated by a certain department, designed to cover up the hopeless incompetence of that department by creating the impression that the past deer season was a good one. Readers of *The Broken Pole and Rusty Musket*, and other true conservationists, will know the department to which I refer. They will also know the season was a —"

Mr. Blast's prose was interrupted by the arrival of his secretary. "There's a Miss Bunny Teagarden on the phone," she announced, "and she wants to know if it's true that the State is going to establish a reforestation area near here."

"Kindly inform Miss Teagarden," muttered the editor, gripping his desk in a supreme effort at self-control, "that *The Broken Pole and Rusty Musket* is devoted to the cause of conservation, and to that cause exclusively. We have no time to check rumors of this nature. Tell her to call Public Works."

Curse Miss Bunny, he thought. The interruption—but wait. Bunny. Bunny rabbits. He hadn't seen a rabbit for some time. Quickly jotting down a tentative headline, RABBITS EXTINCT, he put in another call to the Conservation Department, but on second thought decided it might be better to let his secretary handle this one. She reported in due time that the Department admitted a serious shortage through the northern states not only of rabbits, but of pheasants as well, although surely Mr. Blast must know that the situation was considerably improved over last year. However, the Department was still very disturbed about it. They honestly didn't know the cause, she said, unless maybe it was the weather, but they were trying to find out.

"Excellent," roared Mr. Blast, sensing an opportunity to strike a real blow for conservation. "Now we're getting somewhere. We've got 'em over the proverbial barrel. They're fresh out of rabbits."

TURNING to his work with renewed vigor, Mr. Blast added a provocative and humorous note to his title: RABBITS EXTINCT? BOYS IN ALBANY SAY BUNNIES CAUGHT COLD. EVER HEAR A RABBIT SNEEZE? But before he went on to write the text of this story Mr. Blast, who had the interests of the public close to his heart and who was a civic leader of no mean proportions, jotted down a few notes for extracurricular activities:

"Rabbit shortage. Must organize public opinion in view of. Mass demonstrations against incompetence and bureaucracy in Albany. Torchlight parades (crowds chanting 'We want rabbits'). Delegation to Albany? Blast to lead?"

So great were the possibilities, and so vital the cause of conservation, that Mr. Blast felt it would be wise to step out for a little refreshment before settling down to work. In the afternoon he would finish off the rabbits. He might even get around to the pheasant problem.

—P. W. FOSBURGH

STRIPERS

OFF MONTAUK

THOSE well acquainted with the striped bass like to have a nickname for him. "Roccus" suits me as it is the first half of his Latin name, the last half of which can be either "saxitilis" or "lineatus", according to your authority.

At Montauk, Roccus lives among the rocks and seaweed which are especially indigenous to this section of the coast. He travels—sometimes singly, but more often in schools—from one cove, point, hole, sluiceway or reef to another, and thus, one must be constantly on the move to locate him. Study of the tides, winds, surf conditions, actions of the gulls and terns and thorough cross-examination of your fellow anglers as to their experiences of the day are musts for those who expect to hook into a striper.

Unlike surf fishing for bass along sandy beaches (of which there are some at Montauk), the local fisherman must master a special technique in casting either a baited hook with sinker or the commonly used block tin squid with its swinging feathered hook. Montauk's rocks must be reckoned with. If someone could invent a magnet which would attract only tin, he could reap a fortune from the lost jigs off this coast.

From Montauk: Mrs. Harry Bruno with a big one.

To keep the squid from snagging, one must so time his cast that when it hits the water he is in a position to throw his reel into gear and start reeling fast before the lure has a chance to settle. If it should happen to become fast in a rock or bit of kelp, it is best to stop reeling, change the position of the body so that by taking up slack line slowly, a mighty heave with the rod will quickly disengage the squid.

THE same technique applies to bait fishing from the beach. When the cast has been made, the slack in the line should be taken up gradually but the hook and sinker should not be moved. When ready to reel in, raise the sinker in one long motion of the rod tip, and reel fast.

Each surfman has his own preference for baits or lures. A tin squid weighing about two and a half ounces with a feathered hook is the most popular lure. It catches bass and is the easiest to cast.

Plugs especially designed for surfcasting seem to be the best lures for Roccus at night. Their wiggling, popping actions provoke him to make vicious swipes, but the plug caster usually gets about four strikes to every fish caught.

The striped bass feeds on a variety of fare. His preferences run to squid, blood or sand worms, skimmer clams, shedder crabs (especially calico shedders), mossbunkers, mullet and spearing or sand eels.

The fascination one experiences fishing for Roccus derives mostly from the uncertainty of catching him. Follow all the best rules when fishing for the striper and it is likely that you will catch him if . . . you follow your own nose, disobey all the tenets, and do nothing right.

—WHITING EVANS, *Amityville*

IN THE SOUND

MY striper fishing in recent years has been pretty much confined to the westerly shore of Long Island Sound, from lower Connecticut south to New York City.

The method most in vogue locally is slow trolling. The best speed—which can be maintained either by use of a motor or the oar-and-muscle combination—is from two to four miles per hour. My personal preference is for slow speed, using a light whippy steel rod five or six feet long; a reel capable of holding 400 to 600 feet of six or nine thread cuttyhunk; a single swivel; about five feet of leader; a 1-0, 2-0 or 3-0 hook; and for bait, a sand worm. The worm is hooked through the head and run up one inch on the shank of the hook, leaving the hook exposed and the whole worm trailing.

While using this rig I find it adds considerably to success if the rod is raised two or three feet and then dropped back quickly. As there are no spinners or other attachments to become fouled, you can drop the lure back at the first indication of a strike and so permit the bass to take the worm in a natural manner. When the bass are hitting short (or chopping, in local parlance), dropping back pays off.

THIS trolling is too costly to use during the daylight hours, as cunners, black fish, snappers and even flounders will rob your bait continuously, but after dark the only things you'll be bothered with will be eels and weakfish. For night trolling it helps to have a marker on your line than can be either seen or felt. The marker should be set at from 60 to 75 feet, which is the distance we usually troll at. The best times to fish are at the last hour of the flood and the first three hours of the ebb tide. As to dark nights or bright ones, I have no preference.

In advocating this method of striper fishing, I know I'm treading on the toes of a lot of anglers who favor one of the hundreds of spinners and spoons now on the market.

During the last year or two plug casting in the Sound has caught a lot of fish, and big ones. This plugging is done at almost any tide but invariably, for best results, from a boat about 150 feet off shore, the idea being to cast in as close to the shore as possible. The heavy plugs now in vogue require a strong rod with a spring butt and lots of muscle.

I admit there's a great thrill in seeing that wall of water about six inches high start behind the retrieve of a plug, and many times the striper that's causing it will make four or five smashes before being hooked. That's all exciting. But after being hooked on a plug the fight a bass puts up is as nothing to what he would do if he had only a baited hook or spinner in his jaw.

I'll stick with the slow trolling. And incidentally, I'm sold on the idea that trolling with a green line takes twice as many fish as doing the same thing with a white line.

—TED TOWNSEND, *Game Protector*

BLACKFLY

By Dr. R. D. Glasgow
State Entomologist, N. Y. State Museum

THE trout season, early April to Labor Day, is not all a fisherman's paradise. In June and early July, especially in the North Country, there is a three or four weeks' interval during which a peculiar brand of torment awaits those who venture into many sections of the deep woods. For this, friends, is the blackfly season.

During this season only the hardiest and most inveterate fishermen will smear themselves with "fly dope" and face the punishment that even a heavy coating of grease or odoriferous ointment will not wholly prevent. And because of the blackfly season in the north, some who know the country and are particularly vulnerable will not begin their vacation at a northern resort hotel or camp before the Fourth, or even the middle of July. Thus the blackfly has an economic importance. He is a factor in cutting the northern resort business to roughly six weeks—July 15 to Labor Day—whereas without the blackfly the beginning of the season might be advanced another six weeks.

Blackfly bites are unpleasant for anyone, resulting as they do in disfiguring wheals that may continue to itch and ooze for several days; and the eyes may be closed by the swelling that can result from even a few well placed bites. Most persons are made ill if bitten by large numbers of blackflies, and some are so sensitive to blackfly venom that they may be made really ill by a single bite.

As fishermen and lovers of the wilderness know from painful experience, blackflies feed on blood. Wild animals are tormented so viciously that during the blackfly season deer may be driven into the water to get some measure of relief from torture by these bloodthirsty insects.

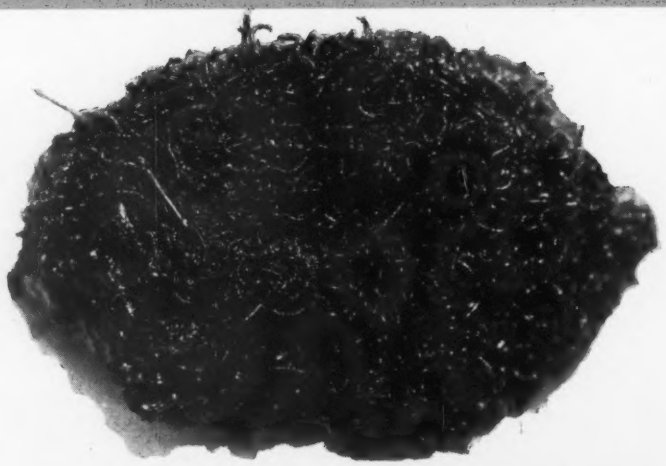
When a female blackfly has had a meal of blood, she becomes anaemotropic; or, in everyday English, develops the instinct to fly against the wind. This causes her to fly upstream against the air currents that flow downstream, and brings her to the smaller, swifter tributaries where conditions are most favorable for the larvae that will hatch from her eggs.

WHEN her eggs are ripe, the female dives into the water, finds a suitable submerged stone usually a foot or more upstream from a rapid, and cements from 300 to 500 eggs to the surface of the stone, spaced uniformly to make a patch about a quarter of an inch across. Sometimes a single stone may bear many hundreds of such patches of blackfly eggs, the patches often over-lapping.

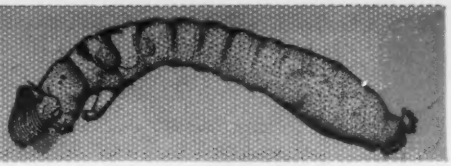
The blackfly larva is well equipped for clinging to the rocks or to other submerged objects where the water is swiftest. On the under side of the body

Pupa clustered on stick

Blackfly larvae clinging to a rock just taken from water



A Peculiar Brand of Torment for Man and Beast.
But His Life History is Interesting.



are two vacuum cup-like sucking areas, one just back of the head and the other at the rear end. With these, the larva can "inch" about over the wet surface without being washed away.

The larva spins silken threads which it sticks securely to the wet surface of a rock or other object where the current is swiftest. It then attaches itself to this silken network by means of small hooks that encircle its posterior "vacuum cup," and thus attached it lets its body trail with the current. In this manner it places itself in a position to feed.

On the head of the larva are two fan-shaped groups of finger-like tentacles; one group on each side of the mouth opening, and each group containing from six tentacles in some species to as many as sixty tentacles in other species. With these two fan-shaped groups of tentacles, the blackfly larva strains out of the swiftly flowing water floating organisms that constitute its food.

WHEN fully grown the larva spins an open-top, basket-like cocoon, shaped somewhat like an inverted cone and attached to a submerged surface in swift water near where it spent its larval life. Within this basket-like cocoon, the larva transforms into a pupa equipped with tracheal gills to provide for pupal respiration.

When the adult blackfly is nearly ready to emerge, the pupa begins to accumulate a bubble of air within the pupal skin; and upon breaking out of the pupal skin the blackfly is borne to the surface and takes wing as this bubble of air rises and bursts.

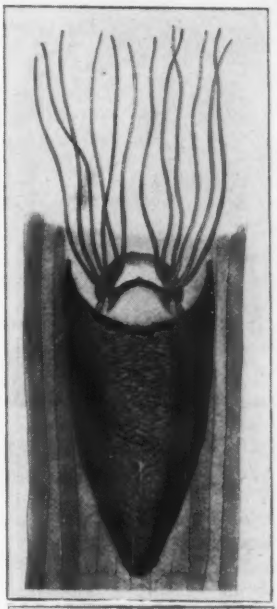
Some will insist in all seriousness that blackflies breed in grass, and in fallen leaves; urging that when such places are disturbed in season, the flies will take wing in swarms.

The last is true; but the inference that the insects develop in such places is false.

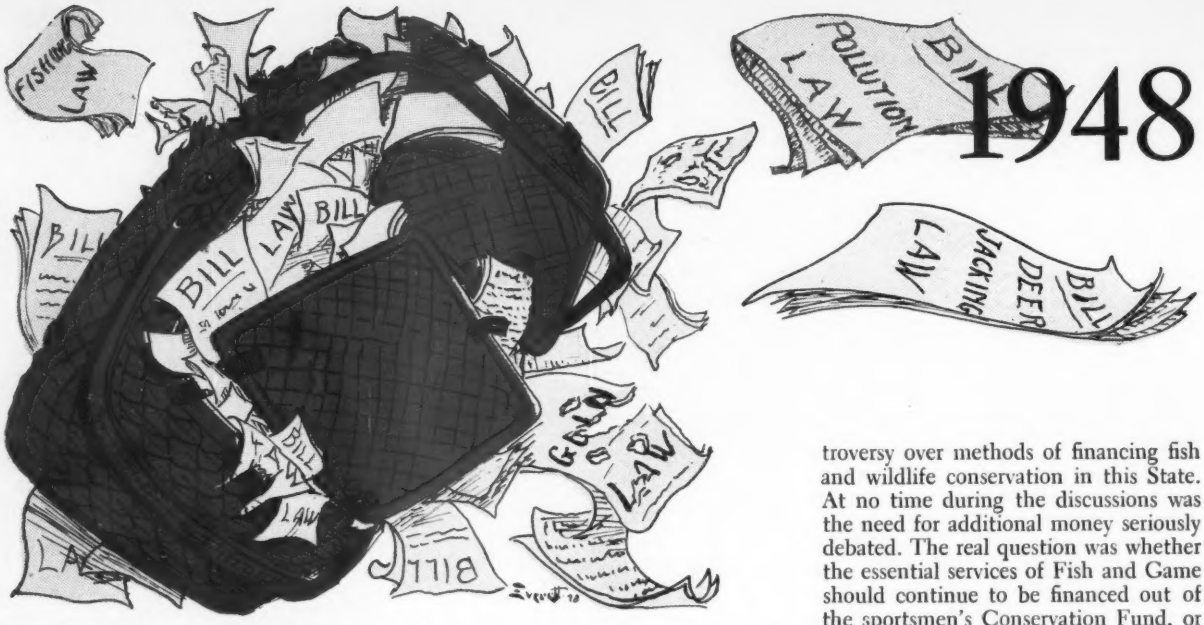
ADULT blackflies avoid dry air. In fair weather, they are on the wing and biting viciously mornings until 9 or 10 o'clock, and afternoons from 3 to 4 o'clock until dark. During these hours the air is cool, and the relative humidity high. As the sun gets higher in the forenoon, however, the temperature rises and there is a corresponding drop in relative humidity; whereupon the blackflies seek shelter in grass and weeds, or under fallen leaves near the surface of the ground, where the humidity remains high even at midday.

When disturbed in such places, the flies will take wing in swarms, and even bite; but they will quickly seek the protection of higher humidity again and disappear.

No one will regret this disappearance, least of all the trout fisherman.



(Top right) the cocoon; (Right) pupa; (Below) a favorite swarming spot



1948

WHEN the 1948 Legislature took its leave of the Capitol, it left behind it an unusually fine record of accomplishment in conservation legislation. The score card for the number of bills introduced—95—and the number of bills passed—55—was in itself close to some kind of a record. This was 30 per cent more bills than were introduced last year and even more significant, the number of bills passed was 77 per cent more than a year ago.

Looking beyond these statistics, we find that while, as usual, many of the bills were more or less in the routine category, some outstanding legislative accomplishments were achieved.

In reviewing this record, the *Conservationist* takes special pride because most of the eight important legislative needs to which it called attention in the Christmas issue were largely met. It was a good sweep, and we are sure that our readers share our gratitude to Senator Stokes and Assemblyman Leo Lawrence and their respective Conservation Committees; to Harold Ostertag, Chairman of the Joint Legislative Committee on Interstate Cooperation, for the special accomplishments of his Subcommittees on Forestry and Pollution Control; to Senator Hammond, who year in and year out does yeoman service for conservation legislation; to the New York State Conservation Council; to the Conference Board of Farm Organizations; to the Farm Bureau Federation and many other organizations, legislators and individuals who made important contributions all along the line; and finally to Governor Dewey and his counsel, Mr. Brietel.

Space does not permit a discussion of each of the many bills passed nor a detailed report on the various events that took place throughout the session which are of more than passing interest. It would take this entire magazine to provide such coverage. However, an insert accompanies this issue in which will be found a complete, though brief listing of each bill passed and signed by the Governor.

There are, however, a number of legislative accomplishments which are worthy of special comment:

Fish and Wildlife Legislation

Financial Crisis Met: First of all, the most immediate and pressing problem posed by the challenge of inflation, as it affected the hard-pressed Conservation Fund, was met by the passage of the so-called license increase bills sponsored by the New York State Conservation Council. While the increases enacted were very modest, in the aggregate the added income will solve the immediate problem. Income from the higher schedule of fees actually will not come in until the beginning of the next license year, January 1, 1949. But, based upon the assurance of such income, the Governor, the Budget Director and the Legislature have authorized substantially increased appropriations for the Division of Fish and Game for the fiscal year beginning this April 1st. Unfortunately, most of the increased revenue will be absorbed by increased costs, but Commissioner Duryea is determined that through careful spending and the exercise of reasonable economies, the work of the Division will be considerably stepped up.

The passage of these bills marks the end of a long and interesting controversy over methods of financing fish and wildlife conservation in this State. At no time during the discussions was the need for additional money seriously debated. The real question was whether the essential services of Fish and Game should continue to be financed out of the sportsmen's Conservation Fund, or whether part of the load should be shifted to the General Fund. There is a growing feeling among legislators and many others that now that the sportsmen have made a reasonable increase in their contribution, any further substantial development in this work should be financed through a contribution from the General Funds of the State, because all of the people of the State have an interest in—and are either direct or indirect beneficiaries of —this kind of conservation work.

War On The Violators! Legislative recognition of the State's grave law enforcement problem was reflected in several major accomplishments. On the top of the list is a new deer jacking law —the Hammond-Reoux Bill—which sharply stiffens the Anti-Deer Jacking Law. Jacking is made an indictable misdemeanor. Everything a jacker uses except his automobile can be permanently confiscated upon his conviction, and fines and penalties have been sharply increased. For the first time, a possible sentence of one year in jail is provided. Great credit goes to Assemblyman Harry Reoux and his sportsmen in Warren County, led by Frank Clayfield, for their work on this measure.

The expanding army of pre-season hunters was threatened by a bill which would have made it illegal to carry firearms afield for two weeks prior to the grouse and woodcock season. This, of course, is the earliest open season on upland game. Unfortunately, this bill had to be vetoed because of defective wording—but the object of the bill was lauded by the Legislature and the Governor, which would seem to assure its enactment in 1949.

Legislative Hopper

A banner year for new Conservation Legislation

The fish hogs who have been taking two days' limit in one day—and have been getting away with it under the two-day limit transportation law—will be hampered by a new law which makes it illegal to possess more than one day's limit on any of our waters or on the immediate shores thereof. The Oneida Lake Association was especially active in supporting this measure.

A vast improvement in the law on fur bearers was brought about by the Griffith-Neddo Bill, which extends the zoning principle (heretofore applied to muskrats only) to mink, racoon and skunk. It also carries several long recognized and greatly needed changes in the trapping regulations.

Deer Laws: The regular open seasons and regulations for the hunting of buck deer were re-enacted for the coming fall on virtually the same basis as those of '47. (One minor exception closed part of Jefferson County for '48). An attempt was made to compromise the difference between the closing dates of the Adirondack season and the counties to the south, but last minute opposition from some of the Adirondack counties prevented this from being done.

One of the most significant and important bills to be enacted was the one which makes it possible, in certain agricultural counties of the State, for the Department to declare an open season on deer of either sex where deer control —above and beyond the buck law—is needed. The bill is significant because it is the result of a joint effort of the sportsmen, operating through a special committee of the New York State Conservation Council, and the farm people, as represented by a special committee in the Farm Bureau Federation. It is encouraging to see these two influential groups working effectively together. The bill is important because it will make possible better management of our deer herd, as well as more adequate control of deer damage.

Pollution Control: The number of bills introduced which were aimed at better pollution control was good evidence that the State means to improve its pollution control machinery. The highlight, however, and the most encouraging sign in years, was the introduction late in the session of a comprehensive pollution bill which is the result of more than two years of intensive work by the Ostertag Committee. The bill is so comprehensive and far-reaching, and was introduced so late, that no attempt was made to pass it this year. The object was to get it in print and distributed throughout the entire State so that industry, municipalities and the sportsmen might have an opportunity to give it a thorough study with a view to positive action in 1949. Every conservation organization should give this bill immediate and continuing attention during the next nine months. The opportunity to secure legislation of this kind, which in the long run will benefit everyone who lives within our State, may not come again for a long time. For copies of the bill, write Assemblyman Harold Ostertag at the Assembly Chambers here in Albany.

SO the 1948 session was a very good one for conservation. Chauncey Hammond, whose contribution has been previously mentioned and who is held in great affection by those who know him, often gets off some choice statements. In commenting on this year's fine conservation record, especially as compared with that of last year, he allowed in his droll way that he guessed "We are just like the old apple tree in my orchard back home—we only bear every other year." We hope, however, that for once Chan is wrong. We hope that 1948 merely marks the beginning of a long series of years during which conservation will come to be recognized as a responsibility, not of just a few zealous groups, but of all the good people of our State.

—J. V. SKIFF, *Deputy Commissioner*

In our December-January issue, we devoted a page to listing the legislative needs of conservation in this State.

We are now pleased to devote two pages—as well as an insert summarizing all of the conservation laws passed by the Legislature and signed by the Governor—to show how extensively these needs have been met.

The

NO one has ever found the pot of gold at the end of the rainbow. But if you think it's tough to reach the end of the celestial rainbow, just try to reach the end of controversy about its aquatic namesake.

Ichthyologists argue over matters of how many different species of rainbow trout to recognize. Anglers disagree in opinions about fishing methods, and conservationists differ over methods for keeping up the supply. Everyone seems agreed that the rainbow is quite a game fish, and that he came to New York from the west coast, where native populations were distributed from Lower California to Alaska. But on most other points there are arguments wherever trout fishermen get together.

Anyone who has seen the brilliant crimson stripe found on some rainbow trout is unlikely to forget this striking adornment, but many people have the idea that all fish of this species have such marking. The fact is that the stripe develops only in adult or maturing individuals. Breeding males show it best, many females are plain silvery and don't show it at all, and in lakes, rainbows are commonly in the "steelhead" coloration. Such fish flash like silver and show x-shaped spots of black instead of round spotting, resembling salmon very closely but having a more square cut to the tail. Before wearing this shiny dress the young rainbow has parr marks—bars of darker color along its sides.

In New York there are a few stream populations of rainbows which rarely exceed a foot in length. Mostly, however, our waters—and particularly our lakes—produce much larger ones. It is hard to believe that all these variable populations represent the same species, but a definite basis for splitting them would be difficult to maintain and most authorities today class all our steelheads and rainbows as belonging to one species. Hereditary differences cannot be ruled out, however, for eggs were secured in different localities in building up fish cultural stocks. The first rainbows, brought into New York prior to 1875, were called California Trout. Later, Washington and Oregon sources are believed to have contributed new blood. But even if fish from only one locality had been imported, it is quite possible that our New York rainbows might have been just as variable. The truth is that differences between supposed strains of these trout have not been investigated sufficiently to provide complete and definite conclusions.

Having pursued the elusive rainbow to this point, it is apparent he is an inconsistent fellow. Unlike our other trout, this one is a spring spawner, although some hatchery breeders produce eggs in the fall. In the wild, rainbows are given to mistaking a winter thaw for real spring, so if they choose to run in late February or early March —long before "opening day"—you can't do anything about it but hope for a better break next year. An especially early opening date, April 1, is set in the Finger Lakes region. But whatever the exact date of the run, you can be sure that the big fellows from the lakes will sense the first freshets and, long before most fish know that winter is over, will be bucking the swift water to work their way up into the inlets where the spawning takes place. Where access to streams is impossible, a few rainbows have been observed to spawn on rocky beaches, but in many instances the female fish do not spawn if they do not have access to streams. Some of them have been found to retain eggs far beyond the normal breeding period.

THE spawning habits of rainbows are an interesting variation from the conventional idea of the "eternal triangle." Males greatly outnumber females on the spawning areas but are never known to help a female dig out a spawning place which, in common with various other species of trout, she does by repeated blows of her powerful tail. Males are fighters. The largest one of the attending males drives others away except for one which stays downstream, close behind him, and refuses to be intimidated. When spawning occurs both males take part in the mating, one on each side of the female. Possibly successful spawning can take place with only one male present, but there are normally two, and one of them is usually small.

Although natural reproduction is successful in suitable waters, there are many factors working against the development of rainbow trout into great abundance. Many of the larger lakes do not have proportionately large areas of spawning stream. Since young rainbows must be carried through their critical period in streams before they can migrate to take up life in a lake, a few calculations will show that a small creek may be an effective "bottleneck" in the natural increase of populations in a very large lake. Work to increase the carrying capacities of such streams is highly desirable and is one objective to be kept in mind in managing rainbows. The purchase of public fishing rights on Catharine Creek and Keuka Inlet, two of our most important rainbow spawning streams, will make it possible to improve these waters, which erosion has badly damaged.

Rainbow trout are propagated in hatcheries, and stocking can to some extent compensate for poor natural reproduction. It must be remembered, however, that many of the lakes where these fish grow well are very large and cannot be planted heavily without great expense, especially since such fish should be more than a year old to stand a good chance of survival under lake conditions. Rearing rainbows to that age is not cheap. So, effective management of streams which can act as "nursery" areas and produce good crops of six-inch fish offers promise as a practical alternative. In any case rainbows of this size, whether produced from natural spawning or by stocking, are valuable where they have access to a suitable lake, for each one that survives after reaching the lake grows rapidly. Stream improvements to make better pools, and control of undesirable fish, are two methods for increasing carrying capacity.

Rainbow

Just a year ago one of our Catharine Creek rainbows weighed in at 15 pounds, 6 ounces, and several others crowded it closely for honors. It is generally agreed that "there are bigger fish in the sea than have ever been caught," and this saying may well apply to inland lakes as well. Samples of rainbow populations in Seneca Lake and other waters producing big ones have indicated that the large size is due to fast growth and not, as some suspect, to extreme old age. Rainbows reach seven or eight years of age, but do not live as long as bass and certain other species. Ages can be readily determined by a study of scales, and the microscope of the biologist will at the same time show the rate of growth in the amount a scale enlarges each year. The migratory type of growth shows up as an abrupt change when the two- or three-year-old rainbow dropped down into a lake. Perhaps a six-inch fish, at two years, will go to eighteen inches in a single year of lake growth and, if a male, come in to breed. Females rarely mature until they spend two years in the lake and have reached an age of four years.

AS you might expect, our friend the rainbow treats scientists just as he does the angling fraternity, and scale reading is full of surprises. Non-migratory rainbows growing to maturity in a stream may breed comparatively young and at much smaller sizes, and may grow at extremely variable rates. It follows that the ichthyologist who tries to draw up an average picture of growth rate is faced with a tough problem.

When it comes to rainbow fishing, New York affords every variation. There is the mere added attraction where an occasional flashy rainbow livens things up a bit for the anglers who expected a brown or a brookie. Or there is the main bout affair that the spring run in the Finger Lakes region represents in April. In general cold water slows the fish down, and many of the early catches are made on natural baits. But in waters where rainbows remain all season, flyfishermen consider them the gamest of all the trout, putting on acrobatics that can be matched only by a salmon.

Perhaps we should make note of another bone of contention—the opinion that the Atlantic salmon and the rainbow are closely related. Superficially a steelhead and a salmon may look very much alike, but this resemblance is not close in the small fish. Nor (to settle another argument) does a young rainbow resemble a brown of similar age.

Rainbows are well named. Not only because of the brilliant stripe they may or may not have, but because there seems to be something light and airy about them. The little fellows seem to love to feed at the surface, and it is not uncommon to take a small rainbow or two on days when brown trout will not rise at all, while in the lakes you may see the larger ones roll at the surface on a still day. If you like "chasing rainbows," you might try to cast a fly within reach of one of them.

The scientific name of the rainbow trout is *Salmo gairdnerii*. You may not choose to call him that, but whatever his name the rainbow (or steelhead) is truly a sportsman's fish. He is likely to remain a fixture among New York's recreational attractions, and with proper management his future may be even brighter. Expansion of our rainbow fishery will of course be difficult, for previous experience has shown that rainbows cannot be readily established in all waters, and by and large our streams are better adapted for brown or brook trout. In many lakes, however, where perch or other fish make brook trout survival virtually impossible, there is reason to expect rainbows can be built up.

In other words, fish conservationists have not reached the end of the rainbow.

—JOHN R. GREELEY

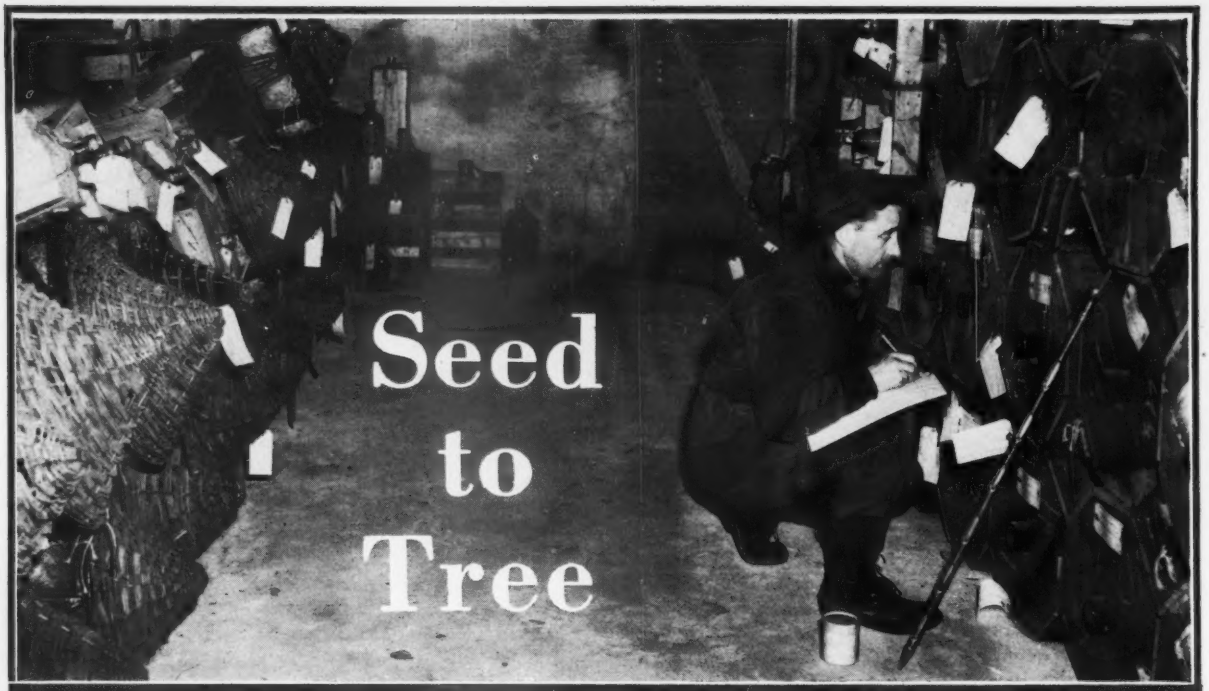
Opening Day on Catharine Creek

WHEN this article was prepared, little did we think the opening day of the rainbow season in the Finger Lakes region would come before the printer took over. But it did, and that gives us a chance to comment on the latest edition of our annual, opening-day Rainbow Derby on Catharine Creek. It was a big success this year.

The creek was checked by a special detail of eight Game Protectors, but even so it was just about impossible to count all the fishermen. There were 860 cars (many of them with out-of-State licenses) parked along seven miles of stream, and an estimated three thousand anglers parked in it. The water was clear and of about normal flow, but it had been high previous to opening day and the rainbows were on hand in larger numbers than usual. Over 800 of them were caught—not an average of one to a customer, but a whale of a catch in the aggregate. The largest fish reported was 16½ pounds.

A new law in effect this season prevents the use of fish eggs, formerly a popular bait for early rainbow fishing. There were no violations of this, or any other conservation law reported along Catharine Creek on opening day, although there were several characters who might have been picked up if Prohibition hadn't been repealed.

Everything considered, perhaps we should chalk up this opening day as just about ideal. That goes for the weather, the water, the rainbow run and the anglers, who in the opinion of all the Protectors working Catharine Creek were the most sportsmanlike group of people they'd dealt with in a long time.—J. R. G.



Seed to Tree

Vault at the Saratoga nursery, showing glass carboys full of seed

"Who does his duty is a question
Too complex to be solved by me,
But he, I venture the suggestion,
Does part of his, who plants a tree."

•

SO wrote Poet Lowell, of Massachusetts. That was about a hundred years ago, and since then tree planting has become a big business, especially here in New York. One reason for this is that not enough people paid attention to Poet Lowell when he wrote his poem—they were busy clearing land and cutting trees, not planting them—so that today we have millions of acres that are badly in need of repair.

Every spring more and more New Yorkers repair their land—and at the same time store up a nest egg for the future—by planting trees. That is good. The demand for seedlings from our nurseries goes up by leaps and bounds every year. That is also good. What is again good is that it's quite simple for people to get the seedlings: all they have to do is write the Conservation Department for a tree order blank, indicate the number and species they want, pay a very moderate sum for the trees and then, when the shipping season gets under way, pick up their crate at the express office and start planting according to the instructions furnished.

All that is good. But what some people don't understand is that we have a big problem in making the supply of seedlings meet the demand. Perhaps you would like to know more about this.

Seedlings are the end result of a long and highly technical sequence of developments that may have begun years ago. The seed is the starting point in the propagation of coniferous trees in the State nurseries, and it comes from many sources: Seeds of Norway spruce and Scotch pine are secured from the Black Forest of Germany; European larch from Austria; Japanese larch from Japan and Korea; Douglas fir from Colorado; jack, red and white pine from the Lakes States as well as from within New York.

SOME of these species, such as the European and Japanese larch, Norway spruce and Scotch pine, are species native to other countries and have been introduced to our State where, however, they are within their natural range. Unfortunately, with but few exceptions, we are not yet growing enough trees of these species in any particular locality to produce the large quantities of seed needed each year in nurseries throughout the nation. Therefore, seed of these species has to be purchased from foreign sources. It follows that seed is a much sought after item, with New York competing for it in the markets of the world.

England, for example, has a very ambitious reforestation program set up to re-establish vast areas of mature forests that were thrown into the war effort. One of the important species in her reforestation program for which great quantities of seed are needed is the Japanese larch. This species is also considered of great importance to New York in building up State production forests. Because of the war, Japan, which was of course the chief source of this seed, has exported practically none. When it is considered that England's immediate demand is said to be 2,000 pounds, while the demand in this country is about the same, one realizes what the competition amounts to.

JUST a year ago, there was practically no Scotch pine seed on the market, yet the program for the production of 6 million Scotch pine trees at our nurseries called for at least 200 pounds of it. During the previous fall, contacts had been made with foresters working with the Army of Occupation in Germany, and the desired seed had been collected during the winter and was ready for shipment about May 1. In order to get it to this country in time for spring sowing, it was shipped by airliner to the Albany airport and arrived within a week, though none too soon for our use. The $1.50 per pound express charges were little enough, since we were able to maintain our seeding program for Scotch pine. This particular species, incidentally, is in very heavy demand for Christmas tree plantations in the western part of the State.

In recent years, it has been much the same story with other imported seed. At one time during the early years of the war, Norway spruce seed was collected in Switzerland, trucked across

France and Spain to Portugal—a neutral nation—and then brought by steamer to this country. The total cost was $6 per pound, in contrast to the 48 cents per pound for the same species of seed bought from Germany before the war.

Seed of such native trees as white and red pine, white spruce and white cedar is secured by the State from cones collected in the Adirondacks. Native cone pickers in that region have been at work—in years when there has been a cone crop—ever since the State nurseries were in their infancy back in the early 1900's. At first there was trouble.

ABOUT the year 1900, several lumberjacks in the vicinity of Tupper Lake were approached by a State official with the proposal that they collect small quantities of spruce cones as a sideline in their work. The men, who had never heard of such nonsense before, refused the job even though a good price was offered, and there were remarks to the effect that the State official must have escaped from an institution. About that time, however, cone collections were begun on a small scale and they have continued to the present time.

If you know conifers, you know that they have their own peculiar habits. One of these is that not all of them produce cones every year. Red pines, for example, only produce a bumper crop of cones about once every six years; white pines produce bumper crops about once every three years, while white spruce and cedar deliver the goods almost every year. Between their three and six-year periods, the white and red pines will sometimes produce a very light crop every year; sometimes, none at all. The effect of this capriciousness is that whenever a bumper crop of cones comes along the State must purchase a large enough supply to carry over the lean years. Enough red pine cones, for example, must be collected from a bumper crop to supply the needs at the nurseries for at least six years, and at such intervals the State buys cones from the natives of the Adirondacks totaling about 10,000 bushels.

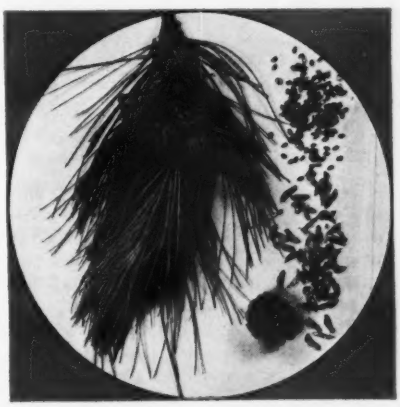
There are three important advantages to the State in making its own seed collection; first, seed of much higher quality can be secured than when bought in the open markets; second, costs can be greatly reduced; and third, a constant supply of seed is made available through storage facilities over a period of years.

Seed is extracted from the cones and stored by means of several interesting processes. One is the baking, or scale opening process. For several months after the cones have been gathered, they are spread out on racks to air dry. This partially opens the scales. (At the time of collection, the cones are closed very tightly.) The cones are then placed in an oven similar to a baker's oven where air at a temperature of 140 degrees is circulated through them. This reduces the moisture in the scales and causes them to open up, after which the seed behind each scale can work loose.

At this stage, the seeds still have their wings attached. By means of an especially built winging machine, the wings and other dirt are removed. The seed is then placed in an electric oven and the moisture content is removed until the relative humidity is down to 5 per cent. The seeds are then placed in large glass carboys, which are well sealed and then placed in cold storage.

Two factors govern the storage of seed over long periods of time. In order to germinate, the seed must first contain a high degree of moisture, and second, it must be exposed to temperatures of at least 40 degrees. For a seed, then, life begins at 40. In recognition of this fact, the State maintains large storage vaults where the temperature is kept below 40 and where the moisture content in the glass carboys is maintained at 5 per cent.

BEFORE the present methods of storage, seed could not be kept much more than two years before losing its viability. But there is seed now in storage that was collected in 1932 and which still holds the same germinative ability it had when placed in the vaults. This is white pine seed, and tests are to be made to determine just what its length of viability is. But although it may be possible to store white and red pine seed for 20 years, it is known that other species, such as the larches, cannot stand such long periods of storage.



Red pine branch with closed cones; then, (bottom to top) an open cone, winged seeds, and de-winged seeds.

In Germany, the methods of cone storage are somewhat different from ours. There the cones are gathered from the trees and stored in deep, cool caves until the seed is needed, at which time the cones are removed from the caves and the seed extracted from them.

Seeds vary in size from the pin-head variety—cedar and hemlock—to the match-head type common to the pines. The number of seed varies, according to species, from 25,000 to 400,000 to the pound. The quantity of seed used during a normal year at our New York nurseries will vary from 2,500 to 4,000 pounds, and in view of this fact it is easy to see why the seed problem takes precedence over all others in the production of trees.

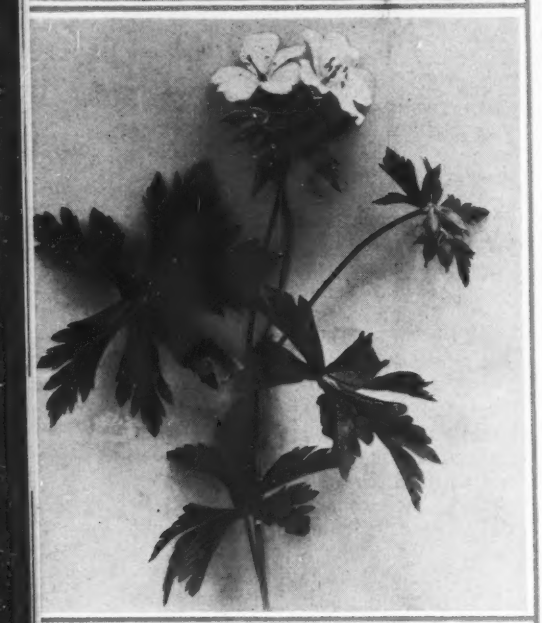
Although Nature has provided a method of tree reproduction through wind dispersal of seed from cones, nevertheless this method is too slow and ineffective on open waste land areas. We can't afford to wait. And besides, in agricultural counties, coniferous seed trees are either entirely lacking or too greatly scattered to effectively produce a forest.

WITH sufficient seed available there remains only the routine, though technical business of propagating two- and three-year seedlings for reforesting our idle lands. Sometimes two-year-old seedlings are big enough to ship from the nurseries. At other times (this year, for example) it is necessary to hold at least part of the two-year crop for another year, because weather and other factors affecting growth have not permitted the trees to attain a satisfactory size. At such times some of our tree orders have to be filled the following year.

The most satisfactory method of reforesting waste lands is to hand plant seedlings obtained from the State nurseries, and two men, even though unused to manual labor, can plant between 500 and 1,000 trees a day. It takes about 1,000 trees to reforest one acre of land. Spring planting is recommended by the Department throughout most of the State, as fall planted trees are subject to frost heaving the following winter except in those northeastern counties where the soil type is light, and where there is apt to be a good snow blanket from early winter through spring.

The growth of trees in a plantation is determined by different factors: the species used, the quality of the planting site and the size of the planting stock. The larches and pines make the most rapid growth, while cedar and spruce progress more slowly. Individual trees in plantations that have been properly managed and cared for should grow at the rate of from 12 to 18 inches each year, although they may require two or three years to become well established before putting on such growth.

—ARTHUR AMADON
Superintendent, Bureau of Nurseries



Spring

By Hon. D.
State Botanist, N.Y.

TO know and appreciate the various forms of wild life is the stimulus back of nearly all genuine conservation efforts. Our wild flowers are elements of wild life—of wild nature—that must be conserved.

Our early spring flowers are most welcome sights after the long cold winter and the deep snows have finally dissolved into the mellow humus of the forest. The accompanying illustrations show only a few of those that grace our fields and woodlands. But among them are the trailing arbutus, the moccasin flower and the pinkster, which, along with others that bloom in the early spring, may be easily destroyed or damaged by excessive picking or by injuring their roots. Such roadside and meadow flowers as the goldenrods, asters, buttercup and violet can be gathered without fear of their extermination, but in addition to those we mentioned before there are the trilliums and gentians and the flowering dogwood and the mountain laurel—not all spring flowers, but all needing protection. Most of them are protected by law on State or publicly owned land.

Our wild flowers are a fine part of New York.

TRAILING ARBUTUS; MAYFLOWER; (*Epigaea repens*)—On the Cover—The scientific name means "creeping on the ground". Although the flower may be humble it has never inherited the earth, for it is often destroyed faster than it can spread by thoughtless gathering or by fire. Fragrant clusters of pink flowers found nestling among the cover of overwintered leaves.

PINKSTER; AZALEA; (*Rhododendron nudiflorum*)—Upper Left—Sometimes called honeysuckle, Linneaus termed it an azalea, but botanists now agree it should be classed with the rhododendrons. A shrub of acid soils in open woodlands or even in northern swamps. Easily cultivated. Fragrant pink flowers appear before or with the leaves. Leaves thin, alternate, mostly clustered near ends of twigs.

WILD GERANIUM; (*Geranium maculatum*)—Left Center—Not the earliest spring flower but a common one in most woodlands and open places outside the Adirondacks. Looks and smells like a household geranium. Likes fertile soil, and is one of the easiest of the wildflowers to grow in a shady garden.

EARLY SPRING ORCHIS; (*Orchis spectabilis*)—Bottom Left Corner—Only found in limestone areas which occur mainly across the middle section of the State; usually in moist calcareous woods in the shade of beech, maple and hemlock. Each plant with two large glossy green leaves with a spike of conspicuous white and lavender flowers. Entire plant rather fleshy, with five-angled stems four to twelve inches high.

Flowers

D. House
Y. *State Museum*

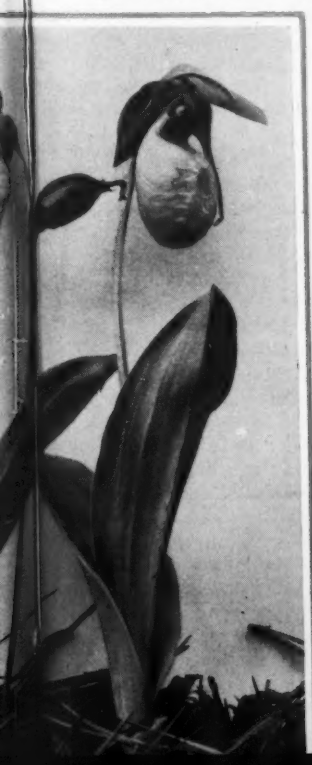
RUE ANEMONE; (*Anemonella thalictroides*)—Left Bottom Center—Wilts so quickly after gathering that it should not be picked for ornamental purposes, though it can be grown in a shaded garden. A delicate plant of woodlands and thickets in most sections of the State outside the higher Adirondacks.

MOCCASIN FLOWER; (*Cypripedium acaule*)—Bottom Center—The pink lady's slipper, one of the orchid family, and one of the best known of our early wild flowers. Not easily cultivated unless the natural conditions under which it grows can be duplicated. Found from the sandy woods of Long Island to the woodlands of the Adirondacks and westward to the Great Lakes, in the deep acid litter of sheltered places, usually pine woods.

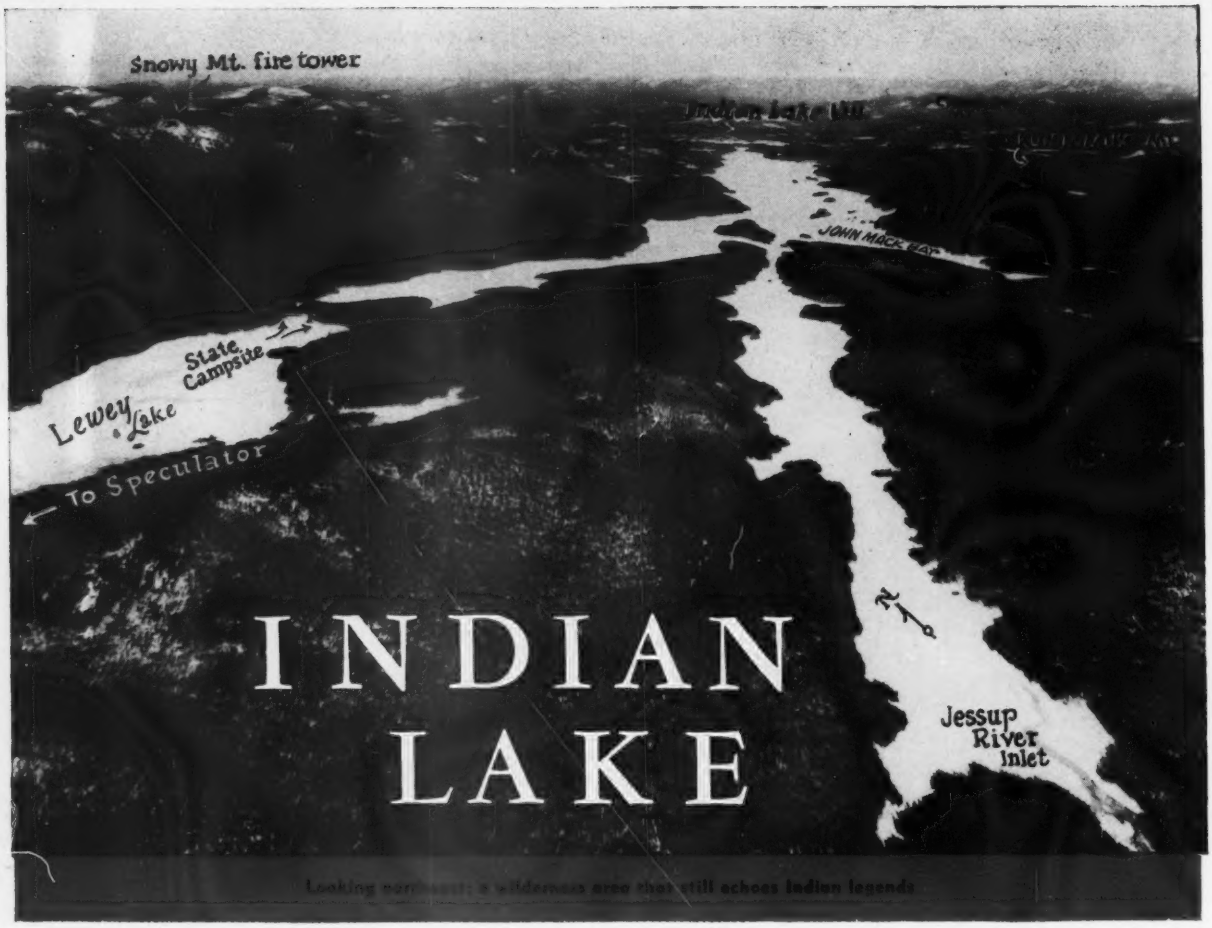
CAROLINA PINK; (*Silene caroliniana*)—Upper Right—One of the most conspicuous but least widespread of our spring flowers, occurring in the southeastern part of the State, northward in the Hudson Valley region only as far as Columbia County. Easily identified by salmon pink flowers and somewhat clammy foliage and stems. Can be cultivated almost anywhere at lower altitudes in loose sandy or stony soil, but not suited to mountainous regions.

BIRD'S-FOOT VIOLET; (*Viola pedata*)—Right Center—One of the least common but most beautiful of our native violets, common only in sandy acid soils of Long Island and also in Albany County. Pansy-like pale violet flowers, sometimes with the two upper petals purple. We in New York have nearly a score of violet species, but none more attractive than this.

MARSH MARIGOLD; COWSLIP; (*Caltha palustris*)—Bottom Right Corner—Found in marshy places, old wet meadows and borders of swamps and streams, in most sections of the State. Golden yellow flowers—one of the first in the spring. Stems and leaves, gathered just before the flowers open, are well known for their edible properties and are cooked and served as "greens" of high nutritional value.



HEPATICA; LIVERLEAF; (*Hepatica americana*)—Right Bottom Center—One of the best known, earliest, and most frequent of our early spring flowers. Leaves persist through the winter, the new leaves appearing with or after the white, pink, rose or blue flowers. There are two kinds of hepaticas, one with rounded lobes to the leaves, the other with pointed lobes. Either kind may begin to flower while the last snowbanks are still present. Type shown here prefers acid soils and is well distributed throughout the State.



Looking northeast: a wilderness area that still echoes Indian legends

INDIAN LAKE—if not geographically, then spiritually—is in the heart of the Adirondacks. It is 1,750 feet above sea level. It is surrounded by wooded hills and stretches of big timber with mountains sloping gently back from the shores. It is a famous summer resort and it is also the Matumbla of the Indians, their legendary burying ground.

The township of Indian Lake includes the village and the lake itself, and also Sabael (the hamlet that sits in one of the hollows on the lake), Big Brook, Cedar River, a part of North River and Blue Mountain Lake Village. The lake is three miles south of the village named after it.

The story goes that in the year 1767, a lone Indian left the Province of Quebec and after journeying through the Canadian woods came at last to the shores of Lake Champlain. Here he made a birch bark canoe in which he paddled to the southern end of the lake, then plunged into the deep forests on the New York side. He was looking for game, especially moose, for his tribe in the north was starving.

One day, breaking through a covert of underbrush, his Indian habit of silence gave away and he uttered an exclamation of delight. Below him was a little lake, gleaming with flashes from the setting sun and reflecting the white birches that hung over the shore. Not a foot of cleared land was to be seen; the shores were heavily wooded and all around stood mighty mountains. The Indian's search was ended, for there was game everywhere.

The lake at this time was tiny, really twin bodies of water about three miles long. At its middle point it was separated almost into two lakes by the narrows formed by sediment brought down by a little mountain brook. This later became known as Squaw Brook.

The Indian, who was destined to play so great a part in the history of the town, was Sabael Benedick, a Banakee. The Mitchell family, whose homes are in the village, are descendants of his. When asked in later years how he knew his age, Sabael informed his listeners that twelve summers had passed over his head when he stood on the hillside above Quebec, while the great battle raged on the Plains of Abraham.

He hunted the territory around his new haven, went back to his homeland and persuaded members of his tribe to join him. He put out trap lines and explored the countryside surrounding his lake. One winter he made friends with an old Dutchman who had settled on Raquette Lake. Sabael evidently was attracted not so much by the Dutchman as by one of his daughters—a red head—and it wasn't long before Sabael brought his bride to his little lake. He built a house on its shores, by Squaw Brook.

The exploits of Sabael are still talked about around Indian Lake. When his wife died, he sewed her mortal remains in birch bark, placed her fork, knife and spoon within the folds of the home-made casket to insure her plenty to eat in the Happy Hunting Grounds, and then buried her on the banks of the little brook, known as Squaw Brook in her memory. This grave was originally on the bank, but since the building of the dam the waters now cover it.

By Gretchen Hoagston Fish
(Mrs. Harlon Fish)
Long Time Resident of
Indian Lake

Sabael made his own flint arrows and later bullets from a lead mine the location of which he never disclosed. Some credit is given him for discovery of the great Tahawus Mines, and it is known that he made a trail through the wilderness to the garnet mines at North River. Many lesser anecdotes are told about him. Late in life he became the first baby sitter, caring for the neighbors' children while they were picking berries or otherwise occupied.

The death of Sabael is shrouded in mystery. Among his grandchildren was one boy who was quarrelsome and disagreeable, and with whom Sabael had many disputes over his secret haunts and sources of supply in the wilderness. All that is known is that when Sabael was 108 years old and still active, he suddenly disappeared and his body was never found. He was thought to have been killed by this grandson, who disappeared from Indian Lake shortly afterwards.

THE first white man to settle near Indian Lake made his appearance in 1840. This was Reuben Rist, a great hunter and trapper, who built a little home down across the Indian River where the Chamberlain road leads off the main highway today. Among the many people he and his wife befriended was a half-frozen boy in his teens who came to the door early one winter morning. The boy had lost his ox team and had been terrified by the cries of the wolves in the deep woods. The boy grew up to become the philanthropist of Glens Falls and one of the great lumbermen of the Adirondacks—Henry Crandall. Down on the bank of the Indian River, on the hilltop back of the hotel, there still stands an old monument placed there by Henry Crandall. On it is inscribed "In Memory of Reuben Rist and Wife, First Settlers on Township 15, Where They Lived to a Good Old Age." This is a simple monument in memory of good people.

Lumbering then, as later, was the drawing card that brought settlers into the country. Several families soon came in to join the Rists, scattering throughout the section. There were the Lockes, Persons, Websters, Hoxies and Porters, and the first white child born in Indian Lake was W. W. Porter. Among the first to begin lumbering were Webster and Bloomingdale. Hoxie was a jack of all trades, lumbering, building a store down on Indian River, bringing in supplies for the settlers and hunting and trapping. He even cut a trail into Moose Lake so that he might bring out the deer that he killed and twice a week sent out in loads to hotels in Saratoga. Game laws were unknown then—the supply seemed unending.

Wolves were plentiful and panthers were often seen. Trout were also plentiful—so plentiful that when small dams were closed on Beaver Meadow Brook for lumbering purposes, the camp cooks could go out and pick up these prized fish by the panful. Venison was the main source of meat.

Disagreements were bound to occur, even though homes were scattered far and wide in the wilderness. The story goes that one day Mr. Peary's pig got into Mr. Bealie's garden, and it was found that there was no agency to settle the dispute that arose. There were no justices of the peace or other law officials within 25 miles, so the people for the first time saw the need of organizing as a community.

Sabael's lake became Indian Lake and the little settlement on its shores to this day is known as Sabael. His lake is known far and wide for its great northern pike, its fighting bass and various other fish, while the country around about has its share of deer to test the skill of the hunter.

Some time in the 50's, the first dam of logs was built on Indian Lake in order to provide a better supply of water to float logs down to the mill. It increased the width of the lake but not its length. Lumbering, which came almost to a standstill during the Civil

War, was again upset in 1876, when a raging fire burned all the timber between Beaver Meadow Brook and North River.

Since then lumber camps have been built, tracts lumbered and relumbered. The lumberjacks would go into the woods in early winter, work long hours and come out in the spring to fling away on a wild carousel their hard-earned wages of months. It was a colorful scene in the spring to see them moving out of the camps, after their logs had been "banked" in readiness for the long drive down the Cedar and the Indian and the Hudson. Horses still in good rig after a hard winter's work, gaily decked with colored rings and ribbons, would pull sleighs full of lumberjacks singing their shanty ditties, and by the river big Milo Daniels, the camp cook, with his stove set up on one of the sleighs and a short length of stovepipe billowing out clouds of smoke in the frosty air, used to flip fried pancakes to the men clustered around him.

EVEN in the 70's the village was a part of the wilderness. In 1877, when Oliver St. Marie built his store, the land had to be cleared of trees. This old store still stands in the center of the village, a sturdy landmark.

Until about 1880 lumbering was the chief industry, but already a few city dwellers were coming in to fish and hunt. They were known locally as "sports", and they began a new era. In 1881 the Prospect Hotel at Blue Mountain was built and it was certainly the most elegant of all the Adirondack hotels at the time. It was the first hotel in the world to be lighted throughout with the Edison incandescent light, and Edison personally supervised the job. It also was the first to serve the ice cream sundae on its menu. Its fame grew as a summer resort and there began the advance into the wilderness of the present tourist trade.

A railroad had found its way into the North Country. The builders' contract was to lay the rails to North River, which was done, but after one load of freight was pulled over the road to fulfill the contract, the rails were pulled up and North Creek became the terminus. Coming to North Creek by train, the tourists found waiting for them springy buckboard wagons and four and six-horse coaches, driven by capable drivers and drawn by dashing carriage horses. Stops for rest were made along the route at hotels and inns, but it was a long day's trip to their destination. Many began staying on at Indian Lake.

Hotels on Indian Lake and Lewey Lake were built and did a big business, with colorful figures such as "Rat" and Martha Farrington, the Lockes, the McCormacks and others who could serve meals and tell tall stories. They kept the "sports" coming back again and again until today their children's children own their own camps and are accepted as natives every summer. They are as proud of their kinship with the wilderness as are the year-around inhabitants.

Next Issue: ASHOKAN

In 1898 the present State dam was built on Indian Lake to increase the water supply and serve as a reservoir. It lengthened the lake to about 14 miles and widened it to about a mile, so that now the "narrows" can be seen only when the water is low. Several times it has been feared that the dam might go out in flood conditions, but the sturdy, hand-cut stone from which it was made has stood up well and is a monument to the workmen of a by-gone day. There was a wild time while the dam was being constructed because many employed were foreigners ready with a knife to right a grievance.

Fishing was good in the lake; in fact, too good in some ways, as so many were caught for the sport and thrown away. Pike, as always, were the most numerous, but in the deep waters, as today, lake trout could be caught by the patient angler. Bass as well as perch and whitefish have been planted in its waters and bullheads abound. But today the fisherman must have in his tacklebox so many varieties of bright-colored lures that the spirit of old Sabael must chuckle a good many times.

Standing guard over Indian Lake is Snowy Mountain. Hosea Locke took the first group of tourists up this mountain many years ago, and now a fire warden's trail winds for five miles up to its summit. The path is well trodden by both natives and summer guests. Below the mountain and for miles along the shores of the lake stretches land owned by the people of New York—a wild summer paradise scarcely touched by the hand of man.

And every summer the population of Indian Lake more than triples as the people of New York come to our town. We cling to our own, but we always welcome the visitor.

Survey Notes on Indian Lake

INDIAN LAKE is a reservoir of 4,454 acres. The present dam raises the original water level a little over 33 feet when the reservoir is full, and this level is sometimes raised another two feet by the use of flash boards. All of this body of water, with the exception of the area which lies above the site of the original lake, is less than 40 feet deep.

The shores are mostly rocky and precipitous with small beaches of sand and gravel scattered here and there. Large areas of the bottom are covered with stumps and water-soaked logs. Weed areas are practically absent due to the great fluctuations in the water level. Oxygen values and temperatures are good in all parts of the lake.

Indian Lake contains 18 species of fish. In addition, muskalonge and pike-perch have been stocked but apparently without success. Those muskalonge reported taken by anglers at various times, when checked, invariably turned out to be northern pike.

Northern pike are rated as common and are valued by fishermen because they average a large size, 15-20 pounders being taken fairly often. This species was introduced in the lake before 1882. They run up into Lewey Lake and the Miami River to spawn, and fish making this movement were taken in the vicinity of the bridge over the stream between Indian and Lewey lakes in the first and only northern pike hatching attempt made by our hatcheries. The experiment was unsuccessful due to natural difficulties and unfavorable water supply.

Common are smallmouth bass, whitefish, yellow perch and bullheads, with the latter two species abundant. Fishing is good for all these except whitefish, concerning which we have few reports.

Lake trout are becoming more numerous. They were introduced early, probably soon after the dam was built in 1889, and although for many years few were taken there have recently been some excellent catches. On the other hand, there is no real fishing for brook, brown and rainbow trout, which, although present, are rare.

Suckers, minnows, rock bass and sunfish are abundant.

—C. W. GREENE, *Senior Aquatic Biologist*

1/6th of the State

Conclusion

IF you have followed this series of articles from the beginning, you are by this time familiar with our argument. If you haven't, this is it:

There are five million acres of New York—one-sixth of all the land in the State—which used to be in agriculture but which are now mainly in weeds and brush and ragged woods. From the point of view of agricultural economics this land has outlived its usefulness, and has been left to its own devices. We call it abandoned land. We also call it our biggest problem in Conservation.

As we have explained in past issues, this problem is in two distinct, though closely related parts. There is the economic part, represented by the virtual retirement—writing off—of an astoundingly large section of our State. And there is the social part, represented by the effect that this retirement has had on the individuals and communities that have been caught up in it. We have tried to explain all this, and in our last issue we suggested a program according to which the private citizen might begin, cautiously, to reclaim the land that his grandfather abandoned in disgust.

At the same time we promised in this final chapter to discuss the State's position and to make some general observations about the importance of salvaging what we can from this forgotten land—as big in the aggregate as our four largest counties.

But before we consider what our State (and all of its local subdivisions) might do to further speed up the reclamation of this lost domain—which would mean a far greater total effort than has ever been brought to bear heretofore—we ask your indulgence while we expound some homely philosophy about the land, and what it means to our people. This bears on the question: is such a larger effort worthwhile?

It seems to us that the land has always been a very potent influence on our Republic. From the time that our Federal government was first planned and formed right down to the present day, our political and social thinking has been tinged by a curious attitude toward the land: the land is good, in fact good beyond question: and so it's good to live on the land and work it. This attitude was a cornerstone of Jeffersonian Democracy, and so it isn't surprising to find it deeply embedded in the Constitution that is still the core of our Federal government.

Some people are inclined to dismiss this feeling for the land as a purely romantic concept, but it seems likely there's a good deal more to it than that. To Americans, at least, the land has conveyed considerably more than its produce. Landowners and people close to the land made solid citizens in Jefferson's day, and in most cases they still do. They had then, and have now, a physical stake in the country, and for that reason are inclined to take a constructive interest in the country's management and development. It may be that with the rise of industry the farmer is no longer the backbone of the country, but it may also be that he never was; perhaps we have mistaken the flesh for the bone, and the real vertebra all the time was the land.

But what happens—and this is what we've been leading up to—what happens when large sections of land no longer produce, and stand idle? What happens, say, when one-sixth of all the land in a state has nothing to offer? If our democracy has roots that go deep into the land—and we claim it has—what happens if the land goes sour?

This is a question that has attracted the attention of some of our most competent writers and social philosophers in recent years. They have found that when the land goes sour on a large scale—as for example, in the Dust Bowl—the people associated with that land go sour along with it. Cynicism, disillusion and a sort of aimless resentment supersede the native faith and confidence that we have come to regard as essential to our democratic society.

We in New York have no Dust Bowl, and no Okies. We have, however, our five million acres of abandoned land and the people and communities that exist on it. As Jared Van Wagenen, our own philosopher and writer from Schoharie County, pointed out in a previous issue of this magazine, we have everything that's required for the development of vast "rural slums." As he also pointed out, the development is already well advanced.

Many New Yorkers—probably a majority—are totally unaware of this situation. To them an abandoned farm is a nice place to go for a Sunday picnic, and the old man who stares blankly from the window of a rotting farmhouse is a quaint local character. But those who are familiar with life in some of our rural areas take a more serious view. They are likely to conclude that submarginal lands cultivate submarginal citizens.

It is our contention, then, that New York's abandoned land is a matter of concern to *all* of New York's citizens. We think that as a problem it has real significance, and quite serious implications, and that we can't afford to let it ride. We think it's a big enough problem to warrant extensive action by the State, and by this we mean the State government, legislative and executive and all its local subdivisions.

What might the State do about it?

As a point of departure let's look briefly at past and present policies and programs. Generally speaking, the first State policy for these lands—which was created by the joint efforts of the agricultural economists at Cornell, the farm organizations, and the conservationists within and without our Department—called for State acquisition and reforestation of these submarginal lands (designated as Classes I and II). The schedule, at one time in the Constitution itself, called for a goal of a million acres. Curiously enough the policy and the program were silent as to what would happen to the other four million acres. The program started off bravely enough during the 30's, but faltered to a virtual halt. The constitutional mandate was repealed in 1938. Appropriations were cut, acquisition was halted, and the nursery program sliced.

At this point we believe it is illuminating to ask why. If the program was sound at the beginning it surely became sounder as abandonment increased. Some say it was the war—but the program came to a creaking stop before the war was even imminent. Some say it was the depression—and yet the de-

pression actually heightened the need, and as a matter of fact the program was at its peak during the worst of the depression and lost headway after the real depression crisis had passed.

We believe the answer is partly to be found in the fact that there was no grass-roots responsibility for this program. When critics and economy-minded legislators attacked public expenditures for reforestation, who of the people back home rose to defend it? Very few.

Fortunately, as a part of the conservation program of the present administration, the reforestation program has been revived. There is now reason to believe that the original million-acre goal will be achieved.

BUT what of the other four million acres? Should the State buy the whole works—and thus (with the State forest preserves) own some 7 or 8 million acres, about one-fourth of itself?

At this point let us make clear, once and for all, the policy of those who are presently responsible for conservation in this State. This policy calls for the retention in private hands of every acre which private enterprise can contrive to own, operate, and pay taxes on. It goes even further than that. It holds that it is so desirable for our land to remain in private hands that the State should provide every reasonable service and encouragement, short of outright subsidy, which will enable our people to hold onto their lands and to produce the timber our State so badly needs. That is the reason for the Forest Practice Act and its service program.

Our policy holds, in short, that every effort should be made to put and keep our submarginal lands in productive private use. It recognizes, however, that under present circumstances, there are large blocks of land which only the State or the county can afford to hold for a long-term reforestation development. It recognizes that when the million acre goal is achieved, a new reading should be taken to determine whether, at that time, the State should bite off another chunk, or whether the counties and/or private enterprise can and will handle the balance.

With this background in mind, what else or what more can be done to speed up reclamation of this land? At this point we heartily recommend getting down to cases—getting some grass-roots responsibility for local planning.

In our opinion a perfect example of how to do this is afforded by enterprising Broome County. Forty-nine per cent of that county is in Class I and II land—submarginal for agriculture, and Broome County has undertaken a comprehensive study to determine just how that land can be used for the best interest of the county, and the State.

There is an impressive list of organizations co-operating in this project. It includes the Department of Agricultural Economics at Cornell, the State College of Forestry at Syracuse, the Broome County Soil Conservation District, the Broome County Extension Service, the Binghamton Chamber of Commerce, and the Conservation Department—all working together under the auspices of the Broome County Rural Policy Committee. The county has already been segmented for the purposes of study, and a detailed investigation of 240 representative parcels of land will be made and the results projected so as to apply to the whole.

We would not attempt to anticipate the recommendations of the authorities making this survey. But it seems safe to say that if any substantial land reclamation project is to be launched—not just in Broome County, but all over the State—then we must have a conservation program on a scale never before attempted in this State, or in any other.

Well, isn't it about time?

At this point our abandoned land ceases to be a problem, and becomes an opportunity.

Unfortunately, Americans don't have a very good record when it comes to taking advantage of such opportunities. As a nation, we've never done much more than toy with conservation.

New York has seen fit to do as much as any other state, and a good deal more than most. But it would be ridiculous, and tragic, if we were to delude ourselves into thinking that what we have done in the field of conservation in any way measures up to what needs to be done. It doesn't. We've hardly scratched the surface, and if these articles have done nothing else, we hope at least they've shown that we have a big surface to scratch, and that we must scratch deeply. If we intend to take full advantage of the opportunities afforded by our abandoned land—opportunities for completely revitalizing our rural communities and for expanding tremendously our forest resources, our public lands, our hunting and fishing facilities—then we must be prepared to institute and support a conservation program on a scale never attempted by any state.

With public support, such a program could be put over. Utilizing the experience and advice of other State and Federal agencies, this Department already has an organizational framework which, with proper expansion, could handle the State's end of the job.

We wouldn't presume to write the program, but it would perhaps be helpful to suggest the form that it might—conceivably—take:

1. Surveys: It seems logical that any large scale program to reactivate our abandoned land should be based on comprehensive surveys, parcel by parcel, county by county, such as that now being conducted in Broome County. The purpose of these surveys would be two-fold: (1) to determine the type of ownership—private, town, county or State—most desirable for each parcel of land; and (2) to determine the best use to which this parcel could be put.

Such surveys might reveal interesting possibilities for county, or even township activity on submarginal lands: Development of home sites, some permanent for the use of year-round commuters, some for weekend or summer use; development of parks, picnic grounds, swimming and boating facilities—real assets to town or county; and above all development of new sources of supply for local wood-using industries, either existing or hoped for. Counties or towns might well finance and engineer activities of this sort with almost definite assurance that either directly—through re-sale of improved land—or indirectly, through improved local business and welfare—they would

sooner or later get their bait back.

But the surveys would unquestionably disclose some lands, probably the poorest and least accessible, which only the State could afford to acquire and reforest as a long-term investment. These lands would end up as State forests similar to that already existing in Chenango County. As these forests require regular attention and proper administration, small isolated parcels of land are not suitable for State ownership. Large tracts are.

The Department has been buying land according to these principles for years. All that would be required to expand this program, as requested by the rural planning agencies of each county, would be to expand present facilities.

2. Aid to Private Landowners: As we have said before, one of the primary objectives of our program for abandoned land would be to re-establish our rural citizenry. This would mean respecting their rights of ownership, while giving them a helping hand. This Department is already doing what it can in this field, but with proper support it could do a lot more:

a) *Reforestation and Woodland Management:* This Department has its Forest Practice Act. It is designed to help the private landowner in all problems relating to forestry, including reforestation, management of present timber stands, marketing and pest control. There is no charge. Properly implemented and reinforced, the Forest Practice Act could be the backbone of our program.

It is generally agreed that our abandoned land is best suited to reforestation; after that, to recreation. But reforestation comes first. By now it is abundantly clear that if reforestation is to be done on a large scale—if it is to amount to anything more than a relatively few scattered plantings—then the State must take more than an advisory part in it. Spring is the time to plant trees. Spring is also the time to do almost everything else in rural communities. Therefore, if we really want to get trees planted in the spring, the State should be able to supply the labor to do it—at cost, or even under some sort of subsidy. We need planting crews to implement the Forest Practice Act.

ANOTHER practical detail. Reforestation plantings require thinning. If there is no market for the products of this operation, it is hardly reasonable to expect that the private landowner will go to the trouble of thinning his plantation, regardless of the fact that by doing so he may increase the ultimate value of his timber crop. So we need a market for thinning products. In fact, to further implement the Forest Practice Act, perhaps we need a central marketing agency for *all* our timber products.

We will also need more trees to plant. That shouldn't be too much of a problem. This Department doesn't hesitate to say that it has the best nursery system in the world, and come one, come all, this Department is right. With proper support, we could raise more trees, as many more as necessary to meet the demand.

b) *Fish and Wildlife:* If properly developed and managed, our abandoned land makes excellent wildlife territory. If left to its own devices for too long, it does not. This Department already has a State-wide organization of Game Managers whose job it is to show how land can be arranged and planted to provide cover for wildlife, without in any way interfering with other conservation practices.

Converting abandoned land into productive game territory is unquestionably the long-range solution to the problem of providing more sport for more people. At present the Department is able to make little more than token gestures in this direction. But with proper support, the field force of Game Managers and their staffs could be expanded and year-round crews to do the actual work could be added. Predator control, if and when desirable, could be intensified. The Department's shrub (food for wildlife) nurseries could be expanded. Farm ponds could be dug. Marshes could be reclaimed for waterfowl.

The Department also has a fish management organization. At present it is spread even more pitifully thin than its counterpart in the field of game, but with proper support it could be expanded to meet whatever the need might be. We know how to rear fish, and have good hatcheries. We could build more. Through stream improvement, we know how to convert a barren, eroded watercourse into a productive trout stream, and with proper support we could go to work on the feeder brooks that are so common on our abandoned land, and we could add hundreds of miles of fishing water to the State's present hard-pressed supply.

These are only a few of the things that, with proper support, could be done on abandoned land.

By proper support, we mean two things. We mean articulate public demand for, and support of, a conservation program way above and beyond our present activities. And we mean money, real money, to finance that program.

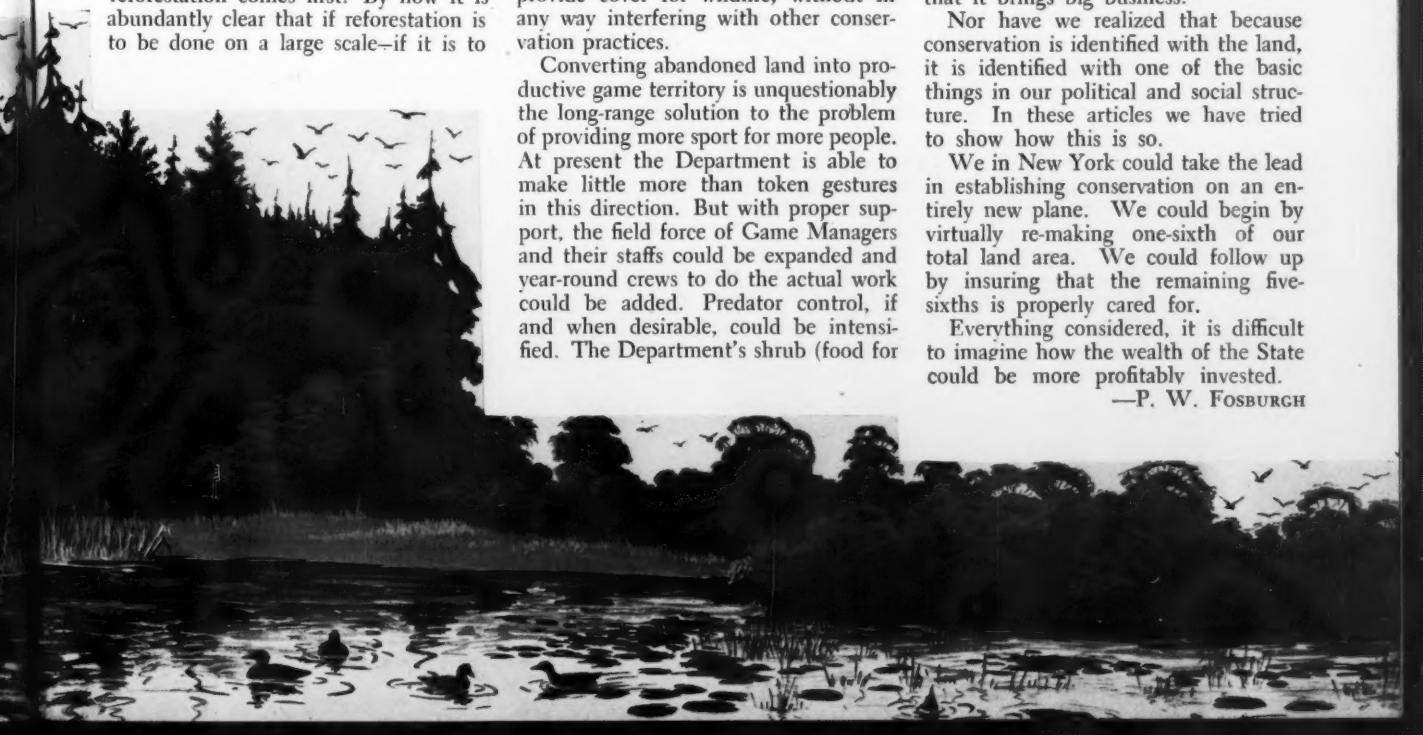
It would probably be easier to get the moral support than the financial. As we suggested earlier, in this country there is no tradition for spending any real money on conservation. We spend hundreds of millions in exploiting our resources, but the money spent in preserving and developing them is carefully counted in thousands. There is the distinct possibility that when it comes to conservation, we are penny wise and pound foolish. We have never realized that conservation is big business—not a penny-ante game—and that it brings big business.

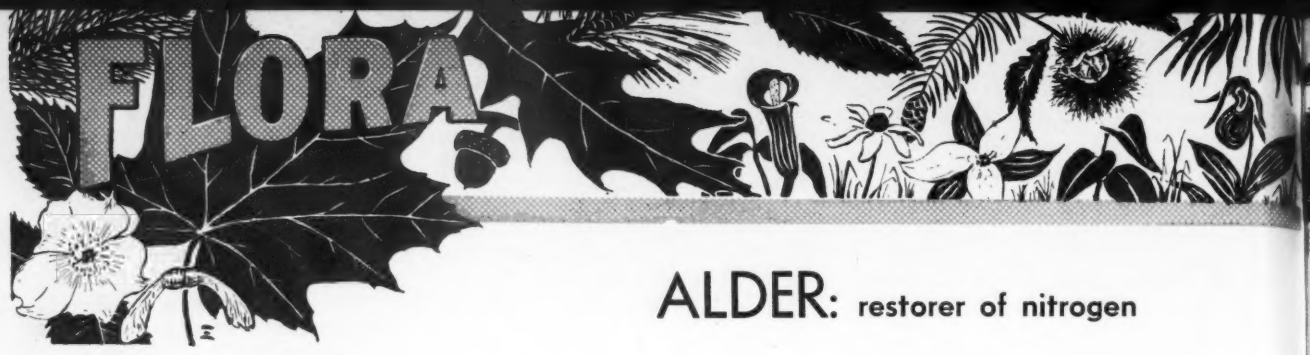
Nor have we realized that because conservation is identified with the land, it is identified with one of the basic things in our political and social structure. In these articles we have tried to show how this is so.

We in New York could take the lead in establishing conservation on an entirely new plane. We could begin by virtually re-making one-sixth of our total land area. We could follow up by insuring that the remaining five-sixths is properly cared for.

Everything considered, it is difficult to imagine how the wealth of the State could be more profitably invested.

—P. W. FOSBURGH





ALDER: restorer of nitrogen

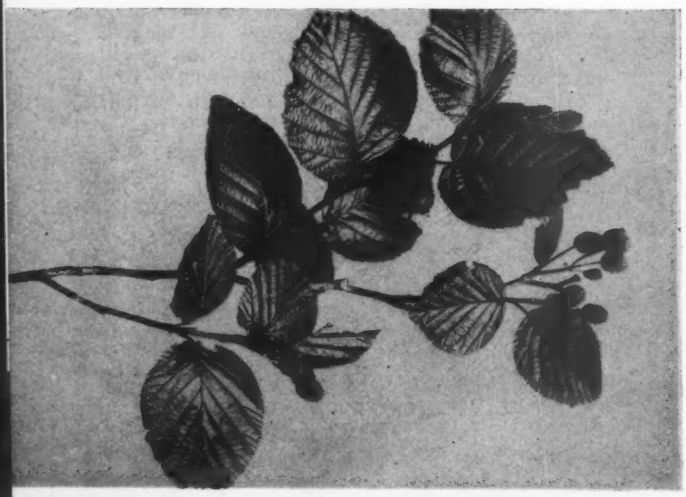
LONG ago the mountaineers of Formosa (the big island off the coast of China) learned a simple crop rotation. When their clearings no longer would produce, a planting of alders would in a few years restore the soil to productivity. The Formosans couldn't tell why this was so; they only knew that it worked.

Modern science has revealed the answer. Alders, like the legumes—alfalfa, clover, vetch—bear on their roots nodules containing nitrogen-fixing bacteria, capable of taking nitrogen from the air and transforming it into usable compounds.

Nitrogen is all-important to the growth of plants, and maintaining it in usable form in the soil is a perennial problem for farmers. Animal manure is rich in nitrogen, hence the old saying among the French that a farmer's wealth can be measured by the size of his manure pile. The growing of legumes and the use of commercial fertilizers are other common farm practices designed to keep soils productive.

One of the troubles with our abandoned and submarginal farm lands is a serious deficiency of nitrogen in the soil. The loss of this element through exhaustive cropping, leaching and erosion over vast areas has progressed to such an extent that it takes years for tree growth to become established, and even poverty grass seems to have a hard time. The ability of alders to take over the swamps, seepage areas and poorly drained hillsides, the resulting improvement in the quality and fertility of the soil thereon and the natural seeding-in of both conifers and hardwoods—not to mention the control of erosion—point to the fact that alders have a definite place in Nature's scheme of things.

Alders are found in the cool moist climates of the Northern Hemisphere, where they inhabit swamps, stream flats and high mountain slopes. On the latter, they are often the most conspicuous vegetation. Of the 30-odd species known, nine are found in North America and three of these are native to New York. In size, they vary from the 50-foot trees of the Pacific Coast to small shrubs on our highest mountains.



The three alder species found in our State are large, straggling weak-wooded shrubs with numerous stems, forming thickets in moist or wet places. Leaves are alternate, broad, usually finely-toothed, with somewhat sunken or impressed veins, and they remain green until they fall. The conspicuous features in winter are the club-shaped, usually stalked, red-brown or purplish buds, the persistent clusters of cone-like, woody fruits and the terminal clusters of purplish or red-brown catkins. These are of two kinds but both are found on the same branches; the larger ones, up to an inch long, produce the male flowers, while the female catkins are about an eighth of an inch long.

The speckled alder is the species commonly encountered north of Long Island, the smooth alder is common only on or near the Coastal Plain, whereas the green or mountain alder is found in northern New York on the mountains. Our forefathers attempted to introduce the European black alder, which becomes a tree in the Old Country, but like many European woody plants it did not take kindly to our difficult climate.

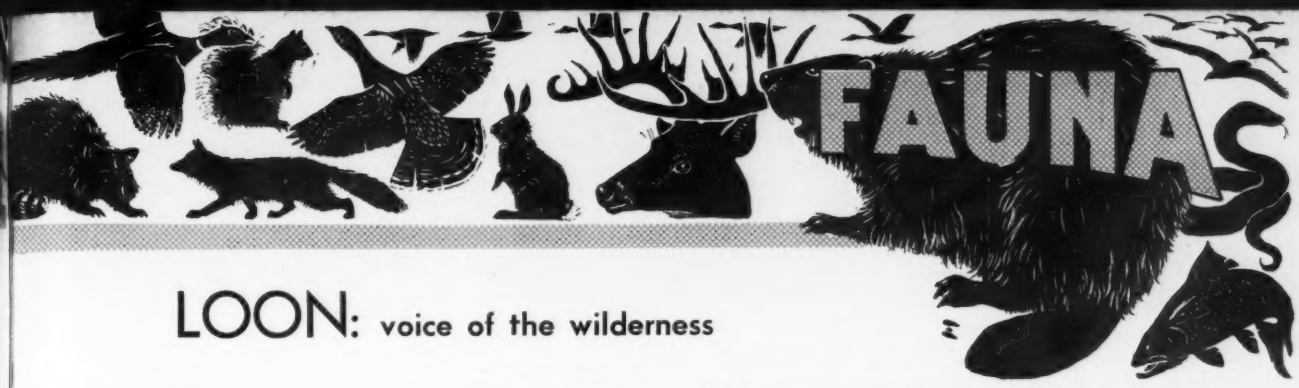
The improved nature of the soil within an alder thicket is apparent within a few years. As a result of the higher level of fertility such soils harbor a large earthworm population, which means that an alder thicket is good woodcock cover from the time the first birds arrive in the spring until the fall freezup forces the last stragglers to zig-zag southward.

In the Adirondacks the alder runs provide the most frequented cover for grouse broods, as well as good hunting spots in the fall. Elsewhere, since the alder thickets are usually wet enough to be late in freezing up, it is possible to find grouse feeding there as late as Christmas; not on the alders, it is true, but on the greens, twigs and buds of other plants growing in the shelter of the alders.

DEER also have an affinity for alder swamps and thickets. Experienced hunters pick their way carefully through such spots, knowing that big bucks often select this kind of cover in which to bed down. Evidence of their passing may be found in the shredded bark of an alder branch, where a buck has rubbed his antlers.

Our alders, being short-lived, small and soft-wooded, have had little economic value, although they once were used to make a fine grade of charcoal for preparing gunpowder. From the bark and fruit were made a yellow dye and material for tanning leather. In Europe, in Asia and on our Pacific Coast, where some of the alders grow to be substantial trees, the wood has been used in making furniture, woodenware, wooden shoes, carved novelties, water pipes and pumps, and even boats, indicating that the wood lasts well in water.

The primeval forests of our State outside the Adirondacks and the higher Catskills grew mainly hardwood trees. Today, thousands of idle acres cleared of this natural cover grow only poverty grass because the soil fertility has been reduced to such a point that the hardwoods cannot get started. Could it be that alders would be of value as a nurse crop, to pave the way for reforestation? The possibility of encouraging or even planting alders might bear investigating.—RALPH SMITH



LOON: voice of the wilderness

"CRAZY as a loon" is a familiar saying. Yet many people who use it have never heard the wild "laughter" of these birds which has suggested the ravings of demented souls. Indulged in chiefly in the solitude of northern lakes and ponds where the species breed, it is truly a voice of the primeval wilderness. In New York it may still be heard on several of the more remote waters of the Adirondacks.

From an evolutionary standpoint, loons belong to the most primitive group of birds now living in North America. They are confined to the Northern Hemisphere and are circumpolar in distribution—that is, they are found in North America, Europe and Asia. There are five species, two of which, the common loon and the red-throated loon, occur regularly in the eastern United States and Canada.

The common loon (*Gavia immer*) is the one usually encountered in New York. The size of a small goose, it has a shorter neck and sharp-pointed bill. During spring and summer its black head and the black and white "checkerboard" pattern of its back are unmistakable. In winter it is mostly grayish, darker above. Its plumage is highly water-resistant, being very dense and rather hard on the surface. In flight the loon carries both neck and feet extended, fore and aft. Its wing-beat is much slower than that of a duck.

Moving north hand-in-hand with the appearance of open water in the spring, the loon takes up summer quarters on the more secluded lakes and ponds of the northern United States and Canada. In the Arctic it also breeds along the coast. With the approach of cold weather it migrates southward and spends the winter months chiefly in coastal waters where it often congregates in large numbers well off shore. In Europe it breeds in Scandinavia and winters along the Atlantic coast and in the Mediterranean. In New York, except for the interior Adirondacks, it is observed mainly during migration.

On its breeding grounds, small ponds are occupied by single pairs while the larger water areas may support several. The nest is usually situated along the shore just above high water mark—a mere hollow in the sand or debris, sometimes scantily lined with bits of grass or other vegetation. Islands are favorite nesting sites. The eggs, two in number, are rather large, dark greenish and heavily marked with dark brown and blackish. Hatching dates throughout June and July have been recorded. For some time after hatching, while in the downy plumage, the young are almost entirely black in color. They take to the water almost immediately after hatching and seldom return to land. Throughout the juvenile period they are usually accompanied by both parents.

The great northern diver, as the loon is called, is quite exclusively an aquatic bird. Its legs are located so far back on the body that it is extremely awkward on land. Not only is it unable to rise from the ground, but, even in water, it requires a long take-off during which it half flies and half runs along the surface before it finally becomes airborne.

In the water, on the other hand, the loon is thoroughly at home and very agile in pursuit of the fish which form its principal diet. It has the ability to ride buoyantly on the surface, to swim with its body partly submerged or with only its head projecting, and to dive. An interesting feature of its behavior is the fact that it frequently uses both wings and feet in propelling itself under water. In other words, it literally flies through the water, and at such times it has been observed to outstrip a small motor boat. Loons are deep divers and have been reported taken in nets 60 feet below the surface.

Beyond the fact that its principal diet is fish, little is known of the food habits of the loon. In coastal waters it has been observed to eat flounders up to four inches across. On its summer range it spends its time primarily on the larger bodies of water and probably feeds chiefly on whatever fish are most abundant, usually minnows, shiners, suckers, perch and similar species. It also eats crabs, mollusks, frogs and aquatic insects.

DURING the winter most of the loon population live almost constantly on the open sea. At this season they often give what is known as their "storm-call", and along the New England coast sailors hearing the call say the loons are trying to blow up an "easterly." In their summer haunts loons use a variety of other calls ranging from loud resonant cries to a plaintive wail. Against a background of solitude they are the very essence of the wilderness.

The loon is a strong flier and covers long distances during migration without stopping, often at considerable heights. It has been said that loons always fly toward water and that, by taking a bearing from them, a person lost in the woods can find his way out. In territory as well sprinkled with lakes and ponds as the breeding range of the loon, the bird could hardly do otherwise.

The loon is one of the most intriguing members of our fauna. Anyone who has heard its wild "hollering" beside a wilderness lake will, remembering, always feel an urge to go back.

—ROBERT W. DARROW

GEWASSA—The white man has adopted many Indian games, including baseball. There is another which might be added to his repertoire of winter sports—Gewassa, or the snake stick contest—a game in which a javeline-like wooden shaft is thrown for distances up to a mile along a shallow trough of snow.

The Senecas of the Allegany reservation recently defeated the Cayugas from Grand River, Canada, in an international snake stick contest held at Salamanca. Title and contest are of little importance to the Indians, but what does count is the fact that the sport comes unchanged in hundreds of years out of the cultural and religious ceremonies of the Iroquois tribes of the Six Nations Confederation.

The game requires both skill and strength. Sticks vary in length from four to eight feet and are chosen by a medicine man who selects sticks to suit different conditions and then gives them medicines of various waxes prepared by secret formulas. The game, for the Indians, is preceded by ceremonies including burning of tobacco and talking to the sticks. Wagers are made before, and collected after, each throw. The thrower poises at his mark, slowly approaches, then increases his speed as he nears the mouth of the trough. The shaft is poised in the right hand, pointed diagonally toward the sky. The thrower lunges at the snowy embankment, then launches the stick into the eight-inch trough with a powerful wrist snap and great initial velocity.

The snake skitters down the irregular run so rapidly that the eye cannot follow it, and after covering a great distance it still moves faster than a man can travel. Scorers almost out of sight mark where the stick comes to rest and signal for the game to proceed. It is not safe to stand along the trough because if the snake should jump out, it could easily run a man through.

The men who make the sticks, from the hearts of various trees, are no longer the throwers; they are the older men, the medicine men who hold the secrets not only of fashioning the shafts but of treating them with medicines to meet the conditions of any particular contest. The present-day thrower cannot perform without his medicine man, and the Indians believe that the art of making Gewassa may soon be lost to them.

BEAVER HEADS—This year, a new feature was included in the regulations governing the beaver season held during March. As a means of preventing trappers from submitting pelts for tagging which had been taken in advance of the open season, they were required to submit with each pelt the fresh head of the animal. This made it impossible for trappers legally to dispose of pelts taken during fall and early winter. Furthermore, only regular Game Protectors were authorized to do the tagging.

While the freshness of heads turned in was generally quite evident, they were forwarded to the Department's wildlife research laboratory for confirmation based on the degree of deterioration of the brain cells. Examination of skulls will also enable technicians to determine the age composition of the beaver take.

BATTLE OF LONG LAKE—One of the many stories that came out of the recent Rangers' meeting at Bear Mountain was that told by Lucius Russell, who can usually be found at his remote station at Shattuck Clearing, on Cold River.

One day last fall Russell was rowing down Long Lake when he noticed a peculiar disturbance on the surface of the water. Going over to investigate, he found that it was caused by two northern pike locked in what was obviously a death struggle, and Russell had no trouble in lifting them both into his boat.

What had happened was simply this: a 27-inch pike had attempted to swallow another of his species only two inches smaller. But on the way down the smaller fish had poked his nose out through his captor's gills, so that by the time the Ranger came along the two fish, whose combined weight was eight and a half pounds, were hopelessly deadlocked.

Whether this was a battle—or simply a matter of appetite—made little difference to Ranger Russell. He had chowder for supper.

DUCKS HOLD OWN—Results of the winter waterfowl inventory, conducted by the U.S. Fish and Wildlife Service with the co-operation of the various states, have not been announced as this is written. However, Service officials revealed at the annual North American Wildlife Conference in St. Louis in March that preliminary reports made it quite clear that the continental waterfowl population was stabilized, and that the downward trend of the past three years at last had been checked.

BEAVER TAGGING AT OUR HOUSE

Beaver tagging at our house is some sight
Daddy has to work half of the night
After a long hard day on snowshoes
He comes home to seal up their nose.

Poor Mama, she is about ready to scream
The blood from fresh heads and pelts is running a stream
All over the kitchen and behind the door
Buster and Fluffy are tracking it up and down the floor.

We children don't dare even breathe or play
If we do there will be a blast from Paul J.
The trappers are trying to be very polite
They can see Mama and Daddy are ready to fight.

Mama, trying to get supper is rapidly wearing
Daddy is sweating and I think maybe swearing
He can't get the seal through that beaver's nose
When this mess will be finished, God only knows.

Daddy now recognizes his great mistake
He recommended an open season in forty-eight
But when it comes to nineteen forty-nine
He will say "No, Mr. Commissioner, not this time."

—JUDY BENOIT
(Daughter of Protector P. J. Benoit)

WINTER BIRDS–During the past month or so a good many people have written in to this office commenting on the comparative scarcity of birds at their winter feeding stations, and so far the southern section is the only part of the State that hasn't been represented in this correspondence. Most of the letters have come from the Adirondack region, but we've also had scattered reports from such widely separated places as Hoosick Falls, Ilion, Hornell and Ogdensburg. These people haven't gotten their usual quota of chickadees and nuthatches and downy woodpeckers, and they want to know why.

Unfortunately, we can't tell them. Some ornithologists in the North Country think that a lot of the small birds, especially the chickadees, had a bad nesting season last spring and that therefore there just aren't as many around as there should be. On the other hand big flocks of them have been seen in the southern part of the State, and The Audubon Society in New York City says that the demand for sunflower seeds and other bird foods has never been greater.

Mr. A. L. Owen, of Cranberry Lake, wrote us that he had been operating a feeding station for 30 years and had always had lots of customers. "But this winter," he said, "has been a bleak exception. Haven't seen a chickadee, blue jay, nuthatch, woodpecker or junco since last summer." Mr. Owen went on to suggest that perhaps last summer's spraying of the forests nearby –to control spruce budworm–had killed off the birds, but on this point at least we can reassure him. Our spraying operations have been carefully and exhaustively checked by wildlife technicians, who have never reported any unfavorable results; and besides, the winter bird shortage is just as remarkable in areas that have never had even a whiff of DDT.

While on the subject of birds, we have interesting reports from District Forester Bill Petty and District Game Manager Greenleaf Chase, both of whom operate out of Saranac Lake. They confirm the scarcity of the feeding station group, but say that the total bird population has been more than maintained by an unusual influx of forest-feeding birds–including crossbills, siskins and finches–no doubt attracted by a bumper seed crop in the conifers.

There is a sour note even here. The mortality among these birds has been extremely heavy, especially along the highways. A good many have been traffic casualties, but many more have died as a result of eating the sand, impregnated with calcium chloride, that has been spread over the icy roads. Bill Petty discovered this by performing several autopsies.

ABOUT FIRES–Most of the serious forest fires in this State, including those of 1903 and 1908, have occurred in the spring of the year, when the leaves of the previous autumn still litter the ground and new vegetation has not yet appeared. We are now entering into another potential fire season.

Judging by our experiences last fall, there is still some confusion in the mind of the public as to what should be done in the event of a forest fire. The first rule, of course, is to stop it before it gets started–by being careful with fire. The second rule, which applies in the event that a fire does get started, is to fight it while it is still small and before it gets out of hand. A wet broom or gunny sack can be used to beat out a grass fire or a small fire in leaves, and even a handful of brush will do the job. All inflammable material should be raked or shoveled away from the burning edge, and any spot fires caused by blowing embers should be promptly extinguished.

If it is apparent that the fire cannot be controlled by the help at hand, then the nearest Observer or Forest Ranger should be contacted immediately. These men are listed under the New York State Conservation Department in your local telephone book, but if you can't find the listing your local operator will help out.

Another thing: if you are called out to a fire, don't go empty-handed. Rakes, shovels, hoes and axes are some of the tools you might throw in the back of your car before you start out.

Elegy on Opening Day of the Trout Season

'Twas daybreak of the season's opening day
The wind spat snowy missiles thru the chilly air
The angler warmed his hands, watched branches sway
And prayed the big ones in the creek would still be there.

Still in the gloom he threaded out his rod,
Attached his leader, bent his hook, and speared a juicy bait,
Then locked the car, and thru the frosty pasture trod
And stood at last at Paradise's gate.

With chilly hands, yet youthful heart afire
The fishing started, continuing on apace.
The guides froze up, the line was stiff as wire;
The icy needles seemed to pierce his face.

His feet got cold, he wished he'd worn his "reds".
The hours wore on and still results were nil
His thoughts rolled back to lucky citizens in beds.
His ardor once so high began to chill.

The sun broke out, he thought things would improve
But still no trout appeared to dirty up his creel.
His spirits slowly settled back into the lowest groove
As once again he cleared the ice from out his reel.

The village churchbell softly curfew tolled.
The weary angler plodded slow his homeward trek.
The weather sure was lousy, the water was too cold (see note)
For fishing. There must be some excuse by heck.

Note: Substitute favorite alibi

1. Water too cold
2. Water too warm
3. Sun too bright
4. Day too dark
5. Water too clear
6. Water too murky, etc.

Again the season's opening day was o'er
The angler disillusioned mutters that he hopes to fry
If ever he's caught fishing, but the more
I think of it, the more I'm certain you'll find him at the same place next year
and I'll be with him.

—V. O. Sturtevant, *Poughkeepsie*

DEPARTMENT ACTIVITIES

TROUT STOCKING—Spring stocking of trout is generally started in the southern part of the State and in the Catskill area about March first. Western, central and eastern New York come next and the Adirondack area is stocked at the end, generally in the latter part of April. This year, with the heavy snow and the late thaws, the stocking program has been greatly retarded, and much of the work is being done after opening day. The program should proceed rapidly, however, when weather conditions permit, as new trucks are available which allow carrying larger loads of fish.

Sportsmen should not feel that the stocking of yearling trout after the opening of the season will result in excessive catches. These fish are allotted to particular sections of individual streams, the distances varying in each case. The Department receives the aid of local sportsmen's groups in the actual planting of the fish, and if the trout are scattered properly over the entire riff sections of the portion of the stream to which they have been assigned, concentrations will not occur. As a result, there will be no excessive removal by the anglers.

Large catches of freshly stocked trout occur when the stocking has been accomplished the easy way—by pouring them off the available bridge crossings.

AT BEAR MT.—The Sixth Annual Forest Fire Conference, held at Bear Mountain March 2 to 5, was highly successful in every way and those attending it, particularly members of our forest fire control field force, left feeling that they had gained a great deal from attendance. These conferences were first organized in 1943 primarily for the discussion of forest fire control problems among Rangers, District Rangers and other Conservation Department personnel concerned.

Heretofore, discussion has been under the leadership of Kinne F. Williams, Superintendent of Forest Fire Control, Solon J. Hyde, Supervising District Ranger, and F. C. McLane, Airplane Pilot, supplemented by substantial contributions from District Rangers and Rangers. An outstanding feature of this year's conference was participation at the request of our Department by three members of the United States Forest Service, namely, C. A. Gustafson, Assistant, Forest Fire Protection, Chief's Office, Washington, D. C.; Crosby A. Hoar, Assistant Regional Forester; and Ephe Olliver, Inspector, of the Region 7 office of the Forest Service at Philadelphia. New points of view injected into the discussion by these members of the Federal Forest Service were of great benefit to us.

MORE FOR DUCKS—The Joint Black Duck Committee, an unofficial advisory body to promote co-ordinated research and management work to help this leading waterfowl species on the Atlantic flyway, has reorganized for the current year. Bob Wells, Secretary of the New York Conservation Department, is now the chairman, succeeding Philip C. Barney of Connecticut.

Last year, the Committee was interested in experimental work to speed up the recovery of eel grass, an important wintering ground food. This work will continue and new activities are now being developed. The most important need, all members of the Committee feel, is to get marsh management work under way on a big scale.

LAUREL WREATH—The Department's new book, "The Ruffed Grouse—Life History—Propagation—Management," has won the Wildlife Society award as the outstanding conservation contribution of the year. The award was announced at the annual banquet of the Society, held in connection with the North American Wildlife Conference in St. Louis, March 8, 9 and 10.

Public sale of the book is now under way through the Division of Conservation Education, Conservation Department, Albany 7, N. Y. The price, $10, includes mailing and handling charges.

FOREST PRACTICE ACT—Another forestry bulletin is now available. In 12 small pages E. W. Littlefield, Superintendent of Forest Investigations in the Division of Lands and Forests, explains the New York Forest Practice Act. A map of the 15 districts into which the State has been divided is included in the pamphlet, along with the names and addresses of our District Foresters.

Write for Forestry Bulletin 21.

PLEASE REPORT LANDLOCKS—The season on landlocked salmon opened April 1. If you've already caught one, or if you catch one from now on, you may want to keep the details secret, but it would be appreciated if you would take the Conservation Department into your confidence.

Our landlocked salmon fishery is still in its infancy and we need detailed records of sizes, ages, evidence of marking (clipped fins), as well as localities and dates of capture. Blanks on which more comprehensive reports can be made are available by writing this Department.

DO YOU KNOW YOUR LAWS?

AN ACT

To amend the conservation law, in relation to prohibiting the possession of fish on waters of the state and the shores thereof in excess of the number which may be legally taken in one day

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section two hundred ten of the conservation law, as last amended by chapter eight hundred twenty-seven of the laws of nineteen hundred forty-seven, is hereby amended by adding thereto a new subdivision, to be subdivision fifteen, to follow subdivision fourteen, to read as follows:

15. Possession on waters and shores. A person shall not possess on waters of the state nor on the shores thereof, any species of fish in excess of the number of such species which may be legally taken by a person in one day; provided, however, that this prohibition shall not apply to a person in possession of fish legally taken in a net licensed by the department.

§ 2. This act shall take effect July first, nineteen hundred forty-eight.

BROWNED EVERGREENS—We've had quite a number of inquiries lately from people who complain that the needles of their evergreen trees, particularly pine and spruce, have turned brown during the winter. These people want to know what's wrong with their trees, and if they're going to pull through.

The browning of evergreens is a condition that has been observed throughout the State, but especially in the Adirondacks. It was caused by the combination of a dry fall and a tough winter. The severe drought last October sent the trees into hibernation with a serious deficiency of moisture, and when this was followed by a cold, dry winter, tree roots were unable to replace the water that evaporated through the foliage. The result was that the foliage dried up and turned brown, particularly in those places where it was exposed to searing winds and bright sunshine.

Most of the evergreens affected will probably survive. Those hardest hit, however, and especially the smaller ones, may not recover.

DEER MORTALITY—Deer have suffered a severe winter in the Catskills and Adirondacks. In the Catskills deep snow and cold weather starting about January 1 created a hazardous condition for the deer. Fortunately, a mid-February thaw melted much of the snow in this region and relieved the potential hazard of losses from malnutrition. On the other hand, during the severe period 1,000 to 1,500 deer were killed by dogs in this region alone.

In the Adirondacks, a critical depth of snow (20 inches) covered the central section of the mountains by January 1 and most of the best deer hunting area by January 8. The mid-February thaw did some good but did not materially relieve the situation. Deep snow and cold temperatures are still, at this writing, creating an extremely serious condition for the deer.

Because of the severity of the Adirondack weather this year, it seems inevitable that winter losses will be heavy —heavier, at least, than those of the past two years. Not until the snows have gone, however, will the true picture be revealed.

MAMAKATING AND THE ARMY—Until the mid-February thaw, the deep snows that blanketed much of the State activated a variety of deer feeding projects. Most of the basic work was done by Game Protectors and Rangers and other interested parties who went into the woods and cut browse in the accepted manner, but there were also some unusual airborne expeditions.

The Department staged some of them. Under the direction of Greenleaf Chase and Bill Severinghaus, cedar boughs were cut and baled into 40-pound bundles, loaded into the Department's Goose, and then dropped from low-level flight onto deer yards throughout the Adirondacks. The deer could be clearly seen, looking skyward.

But the most ingenious stunt was a deal rigged up between the Mamakating Conservation Club, of Wurtsboro, and the 115th Air Force Unit based at Stewart Field, West Point. The Club members cut and baled a ton and a half of cedar and hemlock boughs and then, through Lt. Ralph Benson of Wurtsboro, got in touch with Lt. Col. Lester L. Krouse at Stewart Field. Col. Krouse provided a C-47 transport plane. The bales were loaded into it and a low-level bombing run was then made along the Shawangunk Mountain range. The deer appeared grateful.

WOODCOCK CENSUS—A system of counting woodcock on sample areas is being launched this spring in New York. As a result, the Conservation Department in the future will be able to discuss gunning regulations for the timberdoodle with the Federal authorities on the basis of positive information on woodcock population trends within this State.

The Bureau of Fish and Wildlife Investigations is responsible for the development of the new inventory. The District Game Managers and their assistants and a group of qualified private observers are co-operating in the work. These observers determine the number of occupied singing grounds in each check area. In this, the male woodcock lends a helping hand by his spectacular and also vociferous courtship and mating display. The courtship flight and the flight song are the most colorful portions of the display, but the harsh, nasal call notes uttered by the male on the ground between flights make it possible for observers to count without too great difficulty the number of individuals occupying the check areas. The woodcock is considered monogamous (a one-gal guy—to you) so doubling the count gives the adult birds present. A comparison of the total returns from the various areas from year to year reveals the trend.

SPECIALISTS, OR NUTS?—Strangers who have dropped into the Wilmington Notch Campsite have often reported that all the campers there were crazy. They speak a jibberish that no ordinary person can understand and spend almost all of their time running in and out of the West Branch of the Ausable.

A. T. Shorey, Campsite Inspector, has some figures that explain this situation. Last year 2,504 people—from 36 different states and Alaska—used the campsite. Every one of them, Shorey says, was a dry fly fisherman.

Out of the Past

"Rufus shot a moose."

Dear Mr. Seagears: I was much interested in your page, "Missing New Yorkers", in the February-March *Conservationist*. You state that the last authenticated moose in the Adirondacks was killed in the vicinity of Raquette Lake in August, 1861.

I have in my possession a transcription of a diary kept over a period of many years by Juliette Baker Rice Kellogg. During this period she was married to Wesley Rice and lived on an extremely remote homestead in Essex County, 11 miles from Minerva, on a tract of land now owned by the North Woods Club. Subsequently she moved closer to Minerva and died there not long ago at a very great age.

For the year 1865 there is the following three-day sequence in her diary. (At this time she was about 24 years old.)

"Saturday, February 25: Nothing going on but making buckets." (Sap buckets).

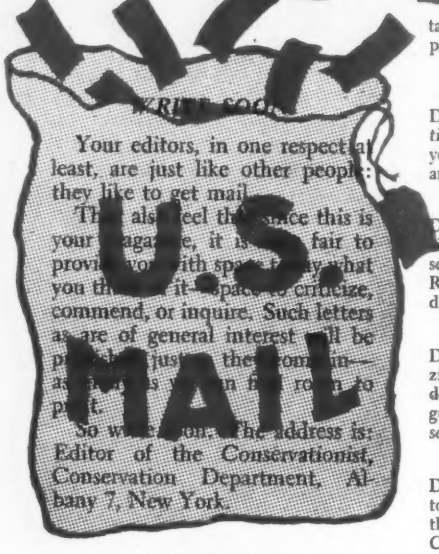
"Sunday: I read nearly all day. Wesley and Jim went to Fish Rock, caught 21 pounds of trout. Rufus shot a moose. I wrote to Mrs. Butler."

"Monday: Washed."

The Rufus referred to was Rufus Wallace. There are many people in the vicinity of Minerva who remember him well. He had a cleft palate which rendered his speech unintelligible—except when he swore—and which is said to have enabled him to put a penny in his mouth and bring it out his nose. He is also believed to have been the bearded man—or one of them—who appears so frequently in Winslow Homer's Adirondack paintings.

I do not doubt the veracity of the diary. I have studied the original carefully, and it is all like the part quoted above: nothing but simple statements of fact.—Hugh Fosburgh, Cherry Plain

Letters to the Editor


WRITE YOUR
Your editors, in one respect at least, are just like other people: they like to get mail.
U.S. MAIL
Editor of the Conservationist, Conservation Department, Albany 7, New York

MANY THANKS

Dear Editor: You seem to suffer from a practically unknown disease called editorial modesty. At least you seem to publish too few letters praising the wonderful job you are doing, and I'm sure the congratulations you receive must far outnumber the brickbats, even though people are more likely to write when something displeases them.

I wonder if the subversive gentleman whom you mention in your editorial (Dec.-Jan. issue) would prefer living in Connecticut where there is no appropriation for conservation education even though the game department staff realizes how much such money is needed. I know that I should pay all those sales taxes we have with a lot better spirit if I knew that part of the money went for conservation work of the kind you are doing.

A Secretary of Conservation should be in the President's cabinet. That will come to us in time if you, and others like you, continue to deliver the story as you are doing in the *Conservationist* with rare tact, good humor, fairness, judgment, talent and accuracy. There. I subscribe to any number of conservation periodicals and none is better than yours. If you print this I shall promise to write no more for a long time. I realize that I have been allowed more space than I deserve in your letter department already.

Adele Erisman, Mystic, Conn.

● *We do get quite a lot of nice letters. We will break a precedent and print a few of them below. The reason we don't often publish such letters is not that we don't like to get them—far from it—but because we don't especially like to see letters of self-commendation in other magazines, and think that perhaps our own readers feel the same way. However, here goes—*

Dear Editor: I want to compliment you on the swell editorial job you're doing with the *Conservationist*. It's one of the best in the field and I'm prone to say—that includes your brethren out here in the commercial world. In connection with your December-January issue, I particularly want to commend you for publishing WISE GUY (pg. 15); we need more attacks as powerful as that upon the growing problem of game law violation.

Bernie Roth, Editor
Hunting & Fishing Magazine

Dear Friends: My December-January *Conservationist* fell in the bath-tub and is ruined. Can you send me another, as I have not yet read it and do not want to miss a single issue.

Lyman Blackmon, Killbuck

Dear Editor: Have not received my *Conservationist* for December-January. Have a complete set to date, for which I wouldn't take $100. Raise my taxes or my license fees, but please don't stop sending my magazine.

W. H. Clute, Central Bridge

Dear Editor: My only criticism of your magazine is that it is not the size of a telephone directory, and is not published weekly. That guy from Syracuse who was knocking the *Conservationist* must be a crank. (Dec.-Jan., pg. 1)

Allan R. Huntley, Albany

Dear Sir: I am unable to refrain from writing to tell you of the admiration for the picture of the Lake Trout on the back cover (Dec.-Jan. *Conservationist*). In years gone by we used to mount a good many fish. Although I have about all the colored plates ever made of fish and game, including the National Geographic Book of Fishes, we never found a correct colored plate of a Lake Trout.

In coloring mounted specimens of fish it is essential to have good colored plates in order to accurately revive the colors in natural shades. Memory usually comes out wrong in attempting to put the colors back on a mounted fish. How I wish that in years past I had had the portrait of the trout which you picture this month.

George H. Lesser, Johnstown

THAT SENECA TEST

Dear Editor: Permit me to reply to Mr. Harry Arnold's letter, published in the Feb.-March issue of the *Conservationist*, in which he asks for the results of the Cayuga and Seneca fox-pheasant test. Not having a crystal ball, I drove out to the test area on Feb. 21 with a party of interested sportsmen, so am in a position to give Mr. Arnold the information he asked for.

We made three trips afield at widely scattered places in the study area, where over 500 foxes have been trapped since Aug. 7. Area covered afoot with a pointer dog amounted to about 3 miles. A total of 35 pheasants were flushed, 24 of which were hens and 11 were cocks. In addition 5 rabbits were seen. Game signs such as droppings and squats of both pheasants and rabbits were in evidence throughout the area covered, indicating a heavy survival of these species. We talked to many of the residents of the area and all reported seeing more pheasants and rabbits this winter than had been observed over the past five years. We had reports of hundreds of pheasants in the Ordnance Depot, where they are feeding on frozen apples and other natural foods. We also found evidence where pheasants fed on these natural foods, ignoring the grain put out for them by State trappers.

Our check of the untrapped area revealed a scarcity of game comparable to that which exists throughout the State, and the reports from there are the same—plenty of foxes but no game. Summed up briefly, in the trapped area we saw game enough to gladden the heart of every sportsman—enough to assure us there will not be any bad nesting season there this year. While on the other hand the absence of game in the untrapped area convinced us that fox control is the only remedy for bad nesting seasons and the current game problem.

Pheasants in flight or a dog on point will tell you the story much better than those figures Ben Bradley and Dirck Benson are giving out on the results of the test. However, their's may be a scientific preliminary to what I've already told you here.

It's really a pity, though, that some of the disgustingly misinformed fellows like yourself don't take the time to visit the test areas and see first-hand the excellent game conditions that can result where foxes are kept under control. But then, maybe you're a fox hunter and couldn't bear to witness the evidence.

As for the bounty matter, well, let me say just this: In South Dakota where a bounty of $7.50 on adult and $3.00 on cub foxes is paid, they have to allow shooting of hen pheasants to keep them from over-populating the land. The success or failure of a bounty is based on the price paid. In considering bounties we shouldn't be penny wise and pound foolish. However, I am open-minded on the matter of how we should control foxes, and if you have a better suggestion, I'd be glad to hear it.

Leo A. Wincowski, Dolgeville

● *We still think the final figures to be given out by Messrs. Bradley and Benson will be worth waiting for.—Editor*

DO BEARS HIBERNATE?

Dear Editor: I am enclosing an item from The New York Times which leaves me somewhat up in the air, so to speak, about the question of hibernating bears. My father has always said that bears hibernate and I took that for a fact. Now the professor quoted in the enclosed clipping says that bears do not hibernate and that it is impossible for them to do so. Does the Conservation Department of New York State agree with the Maine Fish and Game Commission that they do hibernate, or is the Professor from the Harvard Museum of Comparative Zoology right?

Gertrude Antemann, Schenectady

● *We side with Harvard on this one. The body temperature of a true hibernator fluctuates with changes in the temperature of the air, and no such fluctuation occurs in our black bears. If well fed, bears do den up and become dormant, but New York's true hibernators are the woodchuck, jumping mouse and bat.—Editor*

SNOWY OWL

Dear Sir: I am enclosing negative and picture of a snowy owl. This owl had a wing spread of 68 inches and the story is as follows:

Late one evening, while brooder light was on, this owl flew through the glass window in brooder house. Approximately 400 8-week-old chickens smothered and were killed. This happened at the farm of Louis Frutier, High Woods, in the Town of Saugerties, New York. Mr. Frutier killed the owl and gave it to Mr. Cortland Benjamin of this village who had it mounted. He later sold it to a party in New York City.

Harold Mills, Saugerties

● *An unusual story. Very few snowy owls were reported in the mid-Hudson area this past winter.—Editor*

ARBOR AND WILDLIFE DAY

Dear Sir: You may be interested in knowing that Commissioner of Education Francis T. Spaulding plans to issue a proclamation that will designate April 23, April 30 or May 7—whichever best suits the convenience of each locality—as Arbor and Wildlife Day in New York State. He will also designate April 16 as Bird Day.

Charles F. Probes, Chief
Bureau of Publications

FROM LONG ISLAND

Dear Sir: Tell Mr. E. J. Lenhard of Rochester that he doesn't understand Long Island. The reason we have a two months pheasant season is that it takes about six weeks to find open territory to hunt on and then the remaining two weeks to find the birds. So, if you end up the season with three birds you get the Congressional Medal.

What I mainly had in mind in writing, is:—Why wouldn't it be possible for the Department to trap some of the deer on L.I. and transfer them where they might do better and provide some hunting. We, of course, do not have an open season, so they are not of any use to us.

I think G. W. McChesney of Rouses Point has a legitimate "howl". I feel the same way. I think if we had had a duck season like New Jersey (Nov. 17 to Dec. 17) it would have been O.K. all over the State. What made me particularly sore was that after splitting the season, we didn't get our 15 days each half; but actually 11 days, as the two opening ½ days might as well have been closed. That was the silliest thing I ever heard of—opening a duck season at 12 noon!

I think somebody sold the Fish & Wildlife Service a "bill of goods." Ducks Unlimited estimated twice as many birds as the Service and they are right where the ducks congregate. Great South Bay (eastern end) was full of ducks (mostly broadbill—scaup to you) and I took some movies of geese in flight the like of which I have never seen (here) before. There were a great many black ducks; but they might have been native birds.

John H. Murray, Patchogue

● *Long, long ago this Department attempted deer-trapping on Long Island. A good time was had by all, including the deer, none of which got trapped. A repetition of this experiment would be expensive and unnecessary, as there is no shortage of deer in the State at the present time. There are certain sections which could, of course, support more deer, but in these localities the problem is usually to keep deer abundance in harmony with agricultural and other economic interests. Elsewhere, as in the Adirondacks, the range already has about as many deer as it can support.*

The duck season, as set up by the Fish and Wildlife Service, was designed primarily to save ducks. The choice of a split season by this Department was based on comprehensive surveys which indicated that such a season would most fairly provide for sportsmen in the different regions of the State.—Editor

N. Y. RABBITS

Dear Editor: Last week I received a dozen wild cottontails from Missouri and these were liberated in a small bushy area near my home that used to be heavily populated with rabbits. Four days later I returned to the scene of liberations and discovered that foxes had killed two, possibly three, of these rabbits. A further check in another area nearby revealed where foxes had killed two more rabbits, also one partridge.

I am a subscriber to your magazine and regret it is not published more often. In it, you advocate an increase of hunting and fishing license fees to cover the additional cost in promoting larger and more game rearing stations. I am now wondering if game liberated would only be more food for predators and many sportsmen's dollars wasted. I think more has to be done to get rid of the predator and the habitual violator of game laws.

A. Karl Brinkman, Amsterdam

● *This Department asked an increase in license fees to finance all of its fish and game services, of which the game farms are only a part. As to the value of artificial propagation, see article on page 2.—Editor*

JERSEY RABBITS

Gentlemen: I am sending renewal of my subscription to the *Conservationist* and also an additional $1.00 for subscription for Garret Westerveld, the local fish and game warden, who is a very fine gentleman, and a good warden. I know he will appreciate reading the magazine as much as I do.

We in New Jersey have a very difficult problem in our rabbit situation. They seem to be getting scarcer every year, and no one seems to have the answer to the problem. Four or five of us last year stocked 50 rabbits on a 100-acre farm and so far as we know, there were no more than 25 rabbits taken off this farm during the season.

Frank E. Smith, Paterson, N. J.

● *The rabbit problem crosses many a state line. So—we are glad to hear—does our magazine.—Editor*

HUDSON STURGEON

Dear Editor: In order to settle a bet, could you kindly let us know whether there are sturgeon in the lower Hudson, below Yonkers.

Walter Lison, New York City

● *Yes, there are.—Editor*

WHODUNIT?

Dear Sir: I have noted that in the article on brook trout in the latest issue, the statement is made that the old timers can be blamed . . . for the havoc caused by introduction of yellow perch, bass, . . . into priceless Adirondack trout ponds. This is probably true. I have heard on excellent authority that one of them put great northern pike from the Raquette River into Upper Saranac, just for vengeance, incidentally cleaning out the brook trout in Middle and Lower Saranac, and the Saranac River.

However, something happened in the same category about 1935 which was just about as devastating. This was the introduction of yellow perch into a dozen or more lakes and ponds, all in a comparatively small area, such as Upper and Lower St. Regis, Spitfire, Lake Clear, Long, Hoel, Turtle, Slang, and East Pine, and numerous small ponds. I have heard two explanations, one being that someone in the Conservation Department wanted to give the public the more abundant life, with respect to the amount of fish available, the other that it was just a case of mistaken identity—that perch fry were sent out from a hatchery, instead of brook trout. Whether it was one of these or not, a thorough job was certainly done in a very short time.

I appreciate the answer may be an embarrassing one. If you prefer, you can merely say that you do not know, but I would certainly like to get an off-the-record answer to this one.

Watson G. Harding, Ramsey, N. J.

● *Nothing off the record about this answer, because: (1) the Conservation Department had nothing to do with this destructive job, and (2) this whole business of the spread of yellow perch constantly needs to be brought to the attention of the public.*

We do not know how the ponds you mention became infested with perch. We do know that this species was already abundant in nearby waters before 1935, and we also know that perch are still spreading in the Adirondacks in spite of the law prohibiting unauthorized fish planting. Just as a few persons careless with fire can undo the work of the careful majority, so can a few careless individuals undo the work of trout conservationists by introducing perch into trout ponds, via bait pails or by intent. The fact that the yellow perch, in many waters, is a very good fish makes it difficult to impress people with the danger. So, in the hope that a few real trout conservationists may be activated thereby, we put your letter, and our answer, definitely on the record.—John R. Greeley

REFORESTATION, OR IMPROVEMENT CUTTING?

Gentlemen: Saw your note on tree orders in the last issue. We have two wooded acres in Orange County and are interested in making some plantings, particularly of conifers. The land is now supporting a fairly heavy second or third growth of white and red oaks, aspens, red maple, gray birch and some dogwood and a clump of young chestnuts. We wonder about the suitability of the conditions and how we could get an evaluation. Also how do we apply for State trees and what do they cost? Can we get instructions for their planting and care?

Ernest Schnaebele, Brooklyn

● *From your description, it does not appear certain that tree planting is really the answer in this particular case. If, as you say, the land is already supporting a fairly heavy growth of natural forest, it is quite likely that nature is doing a better job than we could do by trying to plant conifers. We do not generally recommend tree planting except on fairly open land, such as abandoned fields and pastures. Once a natural growth of any kind has become established, artificial tree planting becomes difficult. This point and others are discussed in detail in our Forestry Bulletin No. 2, "Forest Planting in New York", which is enclosed.*

In any case, we will try to be of some assistance to you by asking our District Forester in your area, Mr. F. E. Jadwin, 62 North Street, Middletown, to look over your woods with you at a mutually convenient date. It may be that some improvement cuttings at this time would help to put your woodlot in a better condition, and favor the growth of the more desirable trees. This service is furnished free under the Forest Practice Act as described in Forestry Bulletin 21, a copy of which is also enclosed.

If you should decide to plant conifers, application blanks for trees can be obtained by writing this Department's Bureau of Nurseries. Trees cost from $2 to $3.50 per thousand, the price depending on species and age.—E. W. Littlefield

POOR PUBLICITY

Dear Editor: I enclose a picture which appeared yesterday in both the New York Times and New York Tribune, portraying a prominent baseball player as the captor of what seems to be an unreasonably large number of fish. Possibly a kill of this magnitude is not inconsistent with the Florida game laws. However, this is but one of many instances in which our big league baseball players appear in the off season in the role of game hogs.

To a great majority of American boys these baseball stars are heroes to be emulated in every possible way. I believe that they are aware of this and that those at the helm of organized baseball would gladly alter their publicity campaigns if the matter were brought to their attention by the conservation authorities.

Dana S. Lamb, New York City

● *We agree 100 per cent.—Editor*

LOG DRIVE

Dear Editor: I've been going over all your back numbers and getting a kick out of them, especially the one on Sacandaga and on old-time river driving. ("The Big Boom", April-May '47). The author missed the last big drive out of the Adirondacks, from Ampersand Lake to Tupper Lake, 1925. Ten million feet of sawlogs. Santa Clara Lumber Company. I was there.

Clay Perry, Cheshire, Mass.

PHOTO CREDITS

First cover, pages 16, 17, Dr. Homer D. House; second cover, pages 2, 3, 6, 14, Doug Finch; page 7, Dave Edwards; pages 8, 9, Dr. R. D. Glasgow; pages 15, 18, 19, Earl McGuirk; fourth cover, Wilfrid Swancourt Bronson.

Wildlife Landlord

THE woodchuck is a much better little pal than most folks think he is—provided his home is located where he can't pack his paunch with produce. On a truck farm he's as welcome as a June frost and within his 100-yard operating radius he's just about as destructive. But a woodchuck on wasteland is a cherubic beast specializing in hotel management and with a university degree as an air conditioning engineer. However, if our friend was college bred, it must have been a four-year loaf—for there are few lazier animals.

In the excavating department, the woodchuck has dug up all sorts of honors which not only put him ahead of the field but under it.

For its average 10-pound size, the chunky 'chuck is our most abundant animal. His numbers, however, have been whittled to the point of virtual elimination by persistent small-bore hunters.

All this is well and good on agricultural lands. But when the woodchuck is removed from non-crop areas, the cottontail rabbit and such furbearers as the skunk also suffer.

The American cottontail, unlike his continental counterpart, digs no burrow. Nature muffed that one, for this most popular of all game animals apparently is not able to survive high summer heat unless cool retreat is available. Neither can the bunny survive a combination of zero weather and wind. Here's where the woodchuck hole enters. So does the rabbit. Moreover, the 'chuck's burrow provides handy refuge from many rabbit enemies.

Woodchucks have a common blueprint for their subsoil chalets. Normally, the main entrance, or plunge hole, is identified by a generous mound of earth. On this the grizzled proprietors while away the mid-day hours, scratching, stretching and scanning a surprising amount of horizon.

Usually there are one or more other entrances. No telltale earthworks mark these and often as not they're well concealed. These not only serve as escape holes but also it is possible they are deliberate ventilators in the woodchuck's air conditioning plan. The passageways normally change course at abrupt angles here and there and terminate in grass-lined nests the size of a bushel basket. Most burrows are dug less than four feet below the surface.

Woodchucks are not clannish people. A pair may occupy a burrow but most of the year one old whistle pig seems to be the sole proprietor. The young, normally five, are born in April, hit the deck in early June and are kicked out of house and home in late summer to set up their own diggings.

The 'chuck never feeds for long without snapping upright to take a gander for enemies. His eyes are plenty sharp and an old 'chuck is one of the most difficult to approach of all animals. What's more, a full grown 'chuck has few enemies except man, for they are fierce and determined fighters and never know when they're licked. Young 'chucks, however, are persistently hunted by many predators. Owls seldom get a crack at them because chucks limit their activities to daylight, unusual among animals.

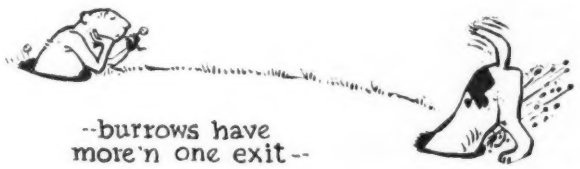
By late September or early October, woodchucks are very fat. Then's the time they call it a season and go underground until early spring. They are true hibernators in that when torpid their body temperature approximates that of the air around them. If that air should hit the freezing point, the woodchuck could be expected to freeze, too. However, studies of hibernation have shown that when that point is reached a chemical reaction in the animal's body apparently serves as a kind of alarm clock and the critter wakes up. Then the body temperature rises to normal until danger is passed. It is unlikely, however, that the woodchuck's nest ever approaches the freezing mark. It seems to hold a constant temperature of around 40° to 50° all winter.

When hibernating, the 'chuck is curled in a tight ball and its respirations may be slowed to one every four or five minutes. After about 5½ months of this sort of thing, the woodchuck feels some subtle urge to get going. Out he comes, often as not when there's still snow on the ground. Meantime, of course, he has had to come out anyway February 2 for a preliminary survey of the shadow department and to give off a few newspaper interviews. Everybody knows that. But otherwise his torpor is uninterrupted for nearly half the year. His fat serves him well as a backlog to maintain the low spark of life. If he should be dug up during hibernation, the process of waking is slow. The 'chuck staggers around as though all four legs were asleep—which they were. But after 15 or 20 minutes he is as lively as ever. Put him back down a hole and he's soon out cold again.

The woodchuck poses a complex management problem. Unquestionably he has no place on agricultural lands. But when he lives on abandoned farms, in the woodlot or on brushlands, that's something else again.

There's no question but that his burrow is a lifesaver for millions of cottontails. That immediately should tag him as the rabbit hunter's best friend. Also, that burrow is a boon to the rural boy trapper who annually harvests an estimated million dollars worth of fur in New York. A large part of that fur harvest is skunk. Ask any boy where he sets his traps.

On the other hand, the woodchuck is an important source



of sport for an increasing army of small-bore enthusiasts who find in him worthy tests of marksmanship and stalking ability. For the most part, however, our hero has little chance against a combination of a good 'scope and a high velocity cartridge. Persistent woodchuck hunting already has cleaned out large sections of the countryside. Unfortunately, a lot of 'chuck hunting is done in spring when a bullseye on an old female means taps for her roly-poly young in the nest. And the hunter thus kills off his future sport.

Increasing, also, is the use of the so-called gas bomb for woodchuck elimination. Intelligently used, the gassing method undoubtedly is the best for necessary control work. But it should only be used when 'chucks are an actual threat to agriculture. It should be remembered that gas is nonselective. There's little question but that hundreds of thousands of cottontails and valuable furbearers have been thoughtlessly destroyed by its indiscriminate use.

A young woodchuck is good to eat. All of them provide food for thought.

—CLAYT SEAGEARS

SUMMARY OF NEW CONSERVATION LAWS

(As Passed by the 1948 Legislature)

FISH AND GAME

FRESH-WATER FISH AND FISHING

BLACK BASS

Lake Ontario and St. Lawrence River. Provides that on Lake Ontario and the St. Lawrence River 4 or more persons angling from a boat shall not in any one day take nor possess in the aggregate to exceed 24 black bass. Effective immediately.

BLACK BASS

Hudson River, Schoharie River and Catskill Creek. In certain sections of these waters black bass of any size and in any number may be taken from the opening day of trout season to November 30.

PIKE-PERCH

Canandaigua Lake. Provides that in Canandaigua Lake a person shall not take nor possess to exceed 5 pike-perch in one day. Effective July 1, 1948.

PIKE-PERCH AND YELLOW PIKE

Oswego River. Provides that blue pike perch and yellow pike of any size may be taken and possessed in the Oswego River north of the lower dam at Oswego. Effective May 1, 1948.

PICKEREL AND PIKE

Westchester County Other Than the Hudson River and in Putnam County Except in the Town of Phillipstown. Provides that the open season for pickerel and pike in the counties of Westchester and Putnam shall be the general open season for such species; i.e., May 1 to March 1. Effective July 1, 1948.

SMELT, YELLOW PERCH, SUCKERS

Scap or Dip Nets. Provides that until January 1, 1950, the Department by order may permit the use of scap or dip nets not exceeding 14 inches in diameter, if in round form, and not exceeding 13 inches by 13 inches, if in square form, in the taking of smelts, yellow perch and suckers, when in its opinion the removal of such fish from any waters of the State is in the interest of wise fish management. Effective immediately.

LAKE GEORGE

Fishing Areas. Authorizes the Department to establish a maximum of three areas in the waters of Lake George where fishing would be prohibited for a period of not less than 3 or more than 5 years according to the determinations of the Department, for the purpose of protecting and promoting the natural propagation of fish in Lake George.

NETS

Lake Ontario. Requires that nets may not be possessed on the shore of Lake Ontario in Wayne County unless covered by a license or a permit from the Department.

ALL SPECIES OF FISH

Possession Limits. Provides that a person shall not possess on waters of the State nor on the shores thereof, any species of fish in excess of the number of such species which may be legally taken by a person in one day, but such prohibition does not apply to a person possessing fish legally taken in a net licensed by the Department. Effective July 1, 1948.

FISH EGGS AS BAIT

Schuyler, Chemung and Steuben Counties. Provides that fish eggs shall not be used as bait in angling or otherwise taking fish in any waters in the counties of Schuyler, Chemung or Steuben during the open season for trout; and makes the possession of fish eggs on any such waters or along the shores thereof during such open season presumptive evidence of illegal use therein. Effective immediately.

LICENSES

Hudson River. Provides that no license shall be required to take fish by angling, spearing, hooking, long bow or tip-ups in the Hudson River south of the Troy Barrier Dam at the city of Troy. Effective immediately.

Women. Provides that women over the age of 16 years shall require fishing licenses to take fish by angling, spearing, hooking, long bow and tip-ups. Effective January 1, 1949.

Increased Fees. Provides that for the years 1949, 1950 and 1951, applicants for citizen-resident hunting, fishing and combination hunting and fishing licenses shall pay the following fees: Hunting license, $2.25; fishing license $2.25; combination hunting and fishing license, $3.50.

Big Game. Provides for the issuance of a big game license during the years 1949, 1950 and 1951 which allows the holder to take one deer having horns measuring not less than 3 inches in length and one bear not less than 1 year old. The price of such license is fixed as follows: Citizen-resident $2.00; non-resident citizen, $10.50; alien, $10.50. Effective January 1, 1949.

Persons in Armed Forces and Veterans. Provides that until July 1, 1949, any member of the armed forces in active service, or a disabled veteran of World Wars I and II, disabled at least 25 per cent according to the standards of the Veteran Administration, may without license take fish, birds and quadrupeds, except deer, in accordance with the provisions of the conservation law, provided he is in the uniform of such armed forces, or have on his person his furlough or a copy of order granting leave of absence and his service identification tags, or, if he is a disabled veteran, such credentials as are necessary to establish his status as a disabled veteran. Effective immediately.

Patients at Veterans' Facilities, Tuberculosis Hospitals and Veterans' Rest Camps. Provides that any patient at any facility in the State maintained by the Veterans' Administration or at any hospital or sanitarium for the treatment of tuberculosis maintained by the State or any municipal corporation or at any rest camp maintained by the State through the Division of Veterans' Affairs in the executive department may without license take fish by angling, spearing, hooking, long-bow or tip-ups within the county in which is located the facility, hospital, sanitarium or rest camp at which he is a patient, provided he obtains written authorization from the Superintendent or other head of the facility, hospital, sanitarium or rest camp.

Special Archery License. Provides that in every county, or part thereof, in which deer may be taken by the use of firearms during an open season, deer and bear may be taken during the 14 days immediately preceding such open season, with the aid of a long bow having a pull of not less than 45 pounds. A special archery license, cost of which is $5.25, is required. General conservation laws relating to possession, transportation, etc. of deer and bear apply.

Cities Having a Population of Over One Million. Provides that the clerk of any city having a population of one million or more may not issue licenses to hunt, trap or fish.

GAME AND HUNTING

DEER

Open Season and Counties in Which Provided. This is the annual deer law. Specifically it does these things:

1. It re-enacts for the year 1948, the open season in the Adirondack counties for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., October 20 to November 20, except, however, that there shall be no deer hunting in that portion of Jefferson County lying west of a line coinciding with Route 11 extending northerly from the Oswego County line to the Saint Lawrence County line.

2. It re-enacts for the year 1948, the open season in the Catskill counties for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., November 15 to November 30.

3. It re-enacts for the year 1948, the open season in Southern Tier Counties for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., from the 24th to the 30th of November, except on the Sunday occurring within these dates.

4. It re-enacts for the year 1948, the open season in the county of Monroe for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., from the 24th to the 30th of November, except on the Sunday occurring within these dates.

5. It re-enacts for the year 1948, the open season in the county of Niagara for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., from the 24th to the 30th of November, except on the intervening Sunday occurring within these dates.

6. It re-enacts for the year 1948, the open season in the county of Erie for the taking of deer having horns not less than 3 inches in length which prevailed in 1947; i.e., from the 24th to the 30th of November, except on the intervening Sunday occurring within such dates. Effective July 1, 1948.

Westchester County. Re-enacts for the year 1948, the open season for the taking of deer having horns not less than 3 inches in the county of Westchester by aid of a long bow only; i.e., November 15 to December 15. Effective immediately.

Deer of Either Sex. Provides that in any county or part thereof but in no case fewer than 4 counties or parts thereof in that portion of the State lying west and south of a line coinciding with the eastern boundaries of the counties of Broome and Chenango, the eastern and northern boundaries of the county of Madison, the northern boundary of the county of Onondaga, and the New York Central R.R. tracks extending from a point where such tracks intersect the Oswego-Onondaga county boundary line to the City of Oswego, the Department shall have power by order to declare an open season for the taking of deer of either sex under special license whenever such animals shall become numerous enough to cause damage to agricultural crops, or to cause overbrowsing of deer range. Effective immediately.

FUR BEARERS

Open Seasons. Provides (a) two zones for the taking of fur-bearing animals—a Northern and Southern Zone—and fixes the open season for each species of fur-bearer in each zone; (b) that if an investigation made in the month of March of any year reveals that during the current open season for muskrats in any county or part thereof in the Southern Zone, reasonable opportunities were not afforded trappers to harvest the muskrat crop, the Department shall have power to extend by order the open season in such county or part thereof for not to exceed 20 days; (c) that on the opening day of the open season for fur-bearing animals, no person shall stake, set or place any trap or deadfall prior to 7:00 A.M.; (d) that a "muskrat house" and "feeding house," as the terms are used in the law, shall mean any structure constructed by a muskrat in which the animal can take shelter; (e) that animals held captive in traps shall be immediately removed at the time the trap is baited by the trapper. Effective July 1, 1948.

FIELD TRIALS

Field Trials on Licensed Dog Training Areas. Provides that licensees, and others authorized in writing by them, may hold field trials on licensed areas at any time on wild game provided it is not taken by shooting or otherwise killed. Effective immediately.

POLLUTION

Private and Public Waters. Adds acid to the list of deleterious and poisonous substances, and liquids the running of which into public or private waters of the State in quantities sufficient to be injurious to fish life or the propagation thereof is prohibited. Effective immediately.

Penalties. Increases from $100 to $500 and provides for imprisonment of not more than one year, or both, the punishment which may be imposed upon a person convicted of a violation of section 213, subd. 1 (the pollution law), and also increases from $500 to $1,000, the civil penalty to which a violator is liable in a civil action. Effective immediately.

MARINE DISTRICT

SHELL FISH

Surf Clams. Extends to May 1, 1951, the authority for the Department to set the open seasons and size limits for surf or hen clams, locally known as skimmer clams.

Scallops. Provides that open season for scallops shall be from September 16 to March 31, and except in the Town of Huntington they may be taken from October 1 to April 15.

Shellfish. Provides that whenever undersized fish or shellfish are received in transportation from outside the state they shall not be bought, sold, or otherwise trafficked in. Effective July 1, 1948.

Eels. Provides that in the inland tidal waters within the Town of Hempstead, no person shall at any time engage in eel dredging or trawling by the use of nets accompanied by cutting boards, chains or other similar devices.

Salmon. Provides that the term "landlocked salmon" shall include landlocked salmon and Atlantic salmon. Effective immediately.

LANDING NETS

Nissequoque River above Judge's dock. Fish may be taken by angling only. Effective immediately.

LAW ENFORCEMENT

FINES AND PENALTIES

Increased Fines and Penalties for Taking Deer by Aid of Artificial Light. This bill provides:

1. Stiffer punishment than is at present set out in the law for conviction in a criminal action of the offense of taking deer by the aid of an artificial light.

2. Civil penalties for the same offense comparable in severity to the stiffer punishments to be imposed upon conviction in criminal actions.

3. That only Courts of Record may impose the fines and imprisonment for conviction of a violation involving the taking of a deer with the aid of an artificial light.

4. That officers expressly charged with the enforcement of the conservation law may seize and hold pending determination of a prosecution, civil or criminal, any jacklight, spotlight or other type of artificial light, firearm, hunting appliance or apparatus used in connection with the taking of deer with the aid of an artificial light; and if defendant is found guilty or effects a civil settlement for the offense with which he is charged, all the things aforementioned are forfeited to the state. Effective immediately.

MISCELLANEOUS

Possession and Transportation of the Carcasses of Birds ,Fish and Quadrupeds. Extends until July 1, 1949, the temporary provisions of the conservation law which provides that the carcasses of birds, except migratory birds, fish and quadrupeds, legally taken within the State or imported as provided by section 172, subd. 4 of the conservation law, may be possessed in any number at any time; and may be transported in one day in number or amount not exceeding the quantity which may be legally taken in two days, provided the transportation provisions of section 172 are complied with.

Liberation of Hares, Rabbits and Foxes. Prohibits the liberation of European hares, Texas hares, jack rabbits and foxes coming from within or without the State.

Destruction of Dogs. Provides that any member of any town police, within the limits of said town, and any member of the Westchester County Parkway police on any park, parkway or reservation owned or controlled by the county of Westchester or the Westchester County Park Commission, may kill any dog pursuing deer from January 15 to April 15.

Power of Department (Division of Fish and Game) to enter into Co-operative Agreements with any Department of the United States Government, et al. Empowers the Department to enter into co-operative agreement with any department of the United States Government, municipality or person for the purpose of better promoting fish and game practices. Moneys received in accordance with the terms of such agreement are to be deposited to the credit of the Conservation Fund.

COUNTY LAWS

Dutchess County. Empowers the Board of Supervisors of Dutchess County to appropriate annually not to exceed $2,000 for the propagation and release of game, game birds and fish; and in the carrying on of such work to accept aid from any incorporated association or society engaged in such work within the county.

Oswego County. Empowers the county of Oswego to appropriate annually not to exceed $1,000 for the propagation and release of game, game birds and fish; and to accept aid from any incorporated association or society engaged in such work within the county.

Oneida County. Empowers the county of Oneida to appropriate annually not to exceed $1,000 for the propagation of game, game birds and fish; and to accept aid from any incorporated association or society engaged in such work within the county.

TOWN LAW

Appropriation for Deer Food. Empowers any town, upon the request of the Conservation Department, to appropriate in any one year not to exceed $250 to provide food for wild deer when such deer are unable to obtain natural food.

LANDS AND FORESTS

FOREST FIRES

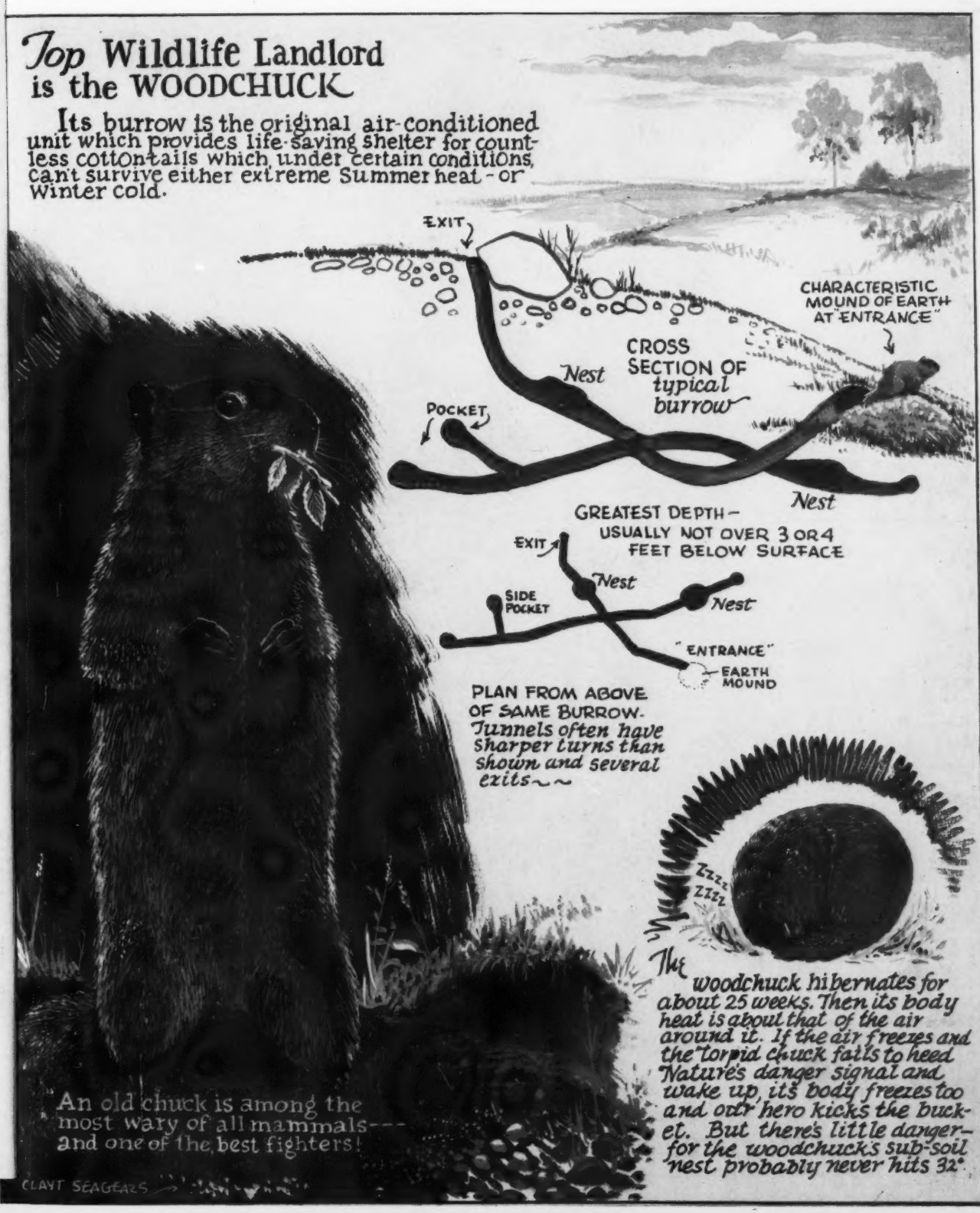
Rebate by County. Provides that one-half the expense incurred in fighting forest fires shall be a charge upon the county in which the fire burned. (Rather than upon the town as heretofore.) Effective immediately.

The *Inside* on the *Outdoors*

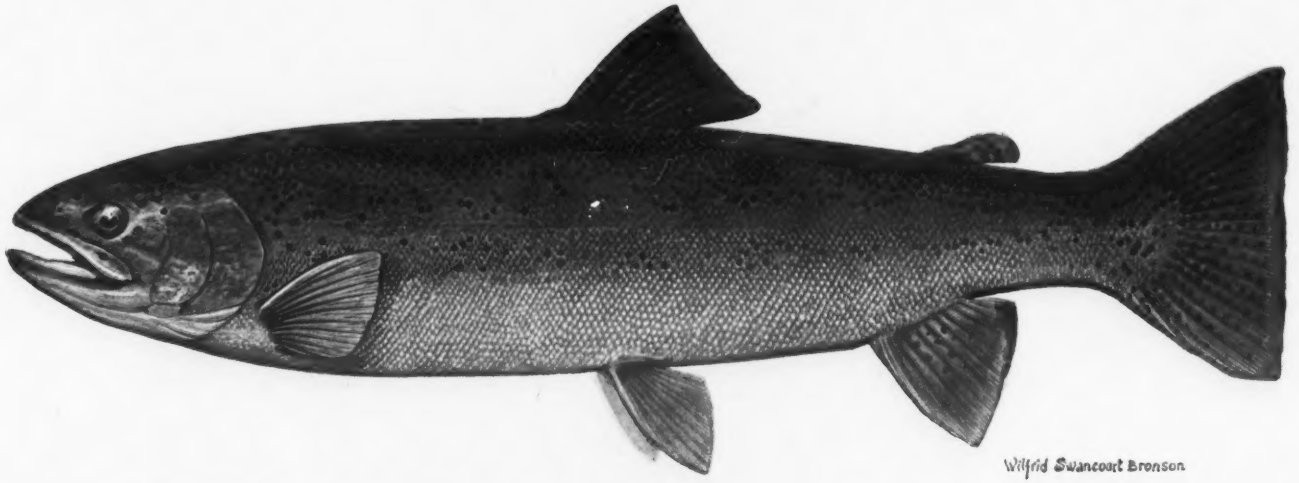
by Clayt Seagears

Top Wildlife Landlord is the WOODCHUCK

Its burrow is the original air-conditioned unit which provides life-saving shelter for countless cottontails which, under certain conditions, can't survive either extreme Summer heat - or Winter cold.


EXIT
CHARACTERISTIC MOUND OF EARTH AT "ENTRANCE"
CROSS SECTION OF typical burrow
Nest
POCKET
Nest
GREATEST DEPTH — USUALLY NOT OVER 3 OR 4 FEET BELOW SURFACE
EXIT
Nest
SIDE POCKET
Nest
"ENTRANCE"
EARTH MOUND
PLAN FROM ABOVE OF SAME BURROW. Tunnels often have sharper turns than shown and several exits~~
Zzzz
Zzzz
An old chuck is among the most wary of all mammals--- and one of the best fighters!
CLAYT SEAGEARS

The woodchuck hibernates for about 25 weeks. Then its body heat is about that of the air around it. If the air freezes and the torpid chuck fails to heed Nature's danger signal and wake up, its body freezes too and our hero kicks the bucket. But there's little danger — for the woodchuck's sub-soil nest probably never hits 32°.



Wilfrid Swancourt Bronson

STEELHEAD RAINBOW TROUT

Salmo gairdnerii irideus

Breeding colors from female 2 feet long